MANAGERS' FORUM
MBA or executive MBA? Paul Glen explains three major differences. **PAGE 44**

WI-FI FREEDOM
A New Orleans official fights to keep the city's free wireless network operating at high speed. **PAGE 16**

COMPUTERWORLD®

THE VOICE OF IT MANAGEMENT ▪ WWW.COMPUTERWORLD.COM

APRIL 24, 2006 ▪ VOL. 40 ▪ NO. 17 ▪ $5/COPY

IN DEPTH: SOA CHALLENGES

SOA Hurdles Forcing Changes In IT Units

Getting developers, managers on board is worth the effort, execs say

BY HEATHER HAVENSTEIN

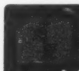
Many corporations and government agencies that are shifting from client/server technologies to service-oriented architectures are facing technical and cultural challenges that are forcing an overhaul of their IT development groups.

Officials at Wachovia Corp., Railinc Corp. and other large corporate and government IT shops have taken measures to tackle the myriad challenges that come with using SOA technology, including changing roles for developers and architects and a blurring of the lines between IT development and operations groups.

Wachovia's retail banking division this month started work on a new multiyear SOA project to create business processes from Web services that can be used in a new call-center application and eventually be reused across the bank's various customer channels.

The project is the division's first foray into designing, assembling and managing common business processes that span multiple channels, and the IT shop is feeling the

SOA, page 12



> We haven't really mastered the business process part of it.
>
> HARRY KARR,

Big IT shops are trying to figure out how to modernize a trillion dollars' worth of mainframe applications, writes Robert L. Mitchell. Options include rewriting, replacing, migrating or encapsulating the code. **Page 27**

Rebuilding the Legacy

MySQL Scheme Designed To Avoid Reliance on Oracle

Open-source vendor seeks broader line of storage engines for database

BY ERIC LAI

MySQL AB plans to wean itself from any dependence on rival Oracle Corp. by building a data storage engine that will work inside its open-source database and by encouraging more third-party vendors to create similar storage engines.

At its annual user conference this week in Santa Clara, Calif., MySQL plans to release an application programming interface for developing storage engines that can be plugged into its namesake database.

In addition, the company is working on an engine of its own, code-named Falcon, CEO Marten Mickos said last week. The software should be ready for public beta-testing this summer and is being de-

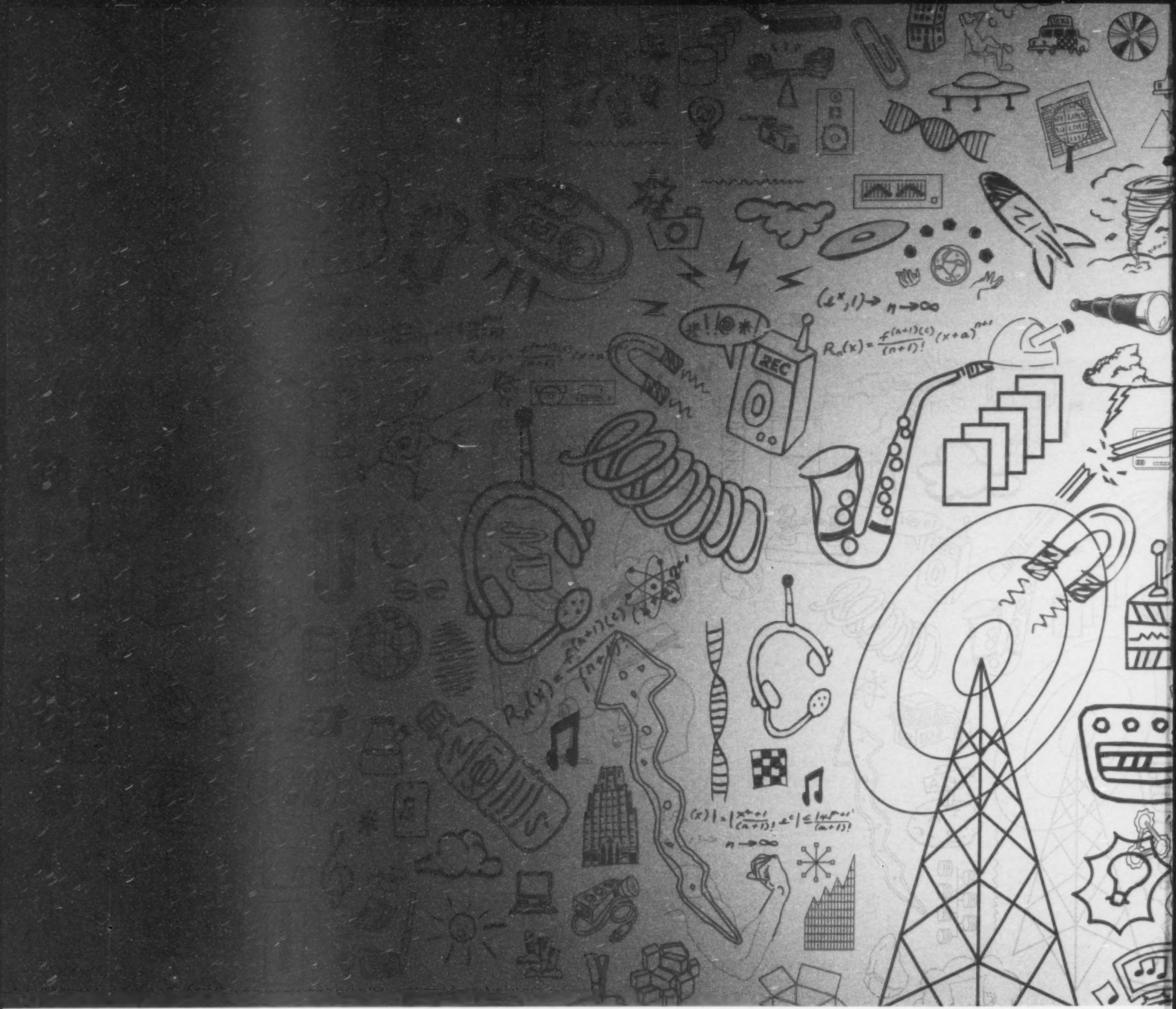
MySQL, page 55

INSIDE

There are signs that Linux may be less immune to security threats than it was in the past.
PAGE 8

NEWSPAPER

#BXBBJFT**************AUTO**5-DIGIT 48103
#0576350/CB/6# CW200617   002   16432
SHERI MARION/SUPERVISOR
PROQUEST   P0083
MS 88
300 N ZEEB RD   73-16
ANN ARBOR MI 48103-1553



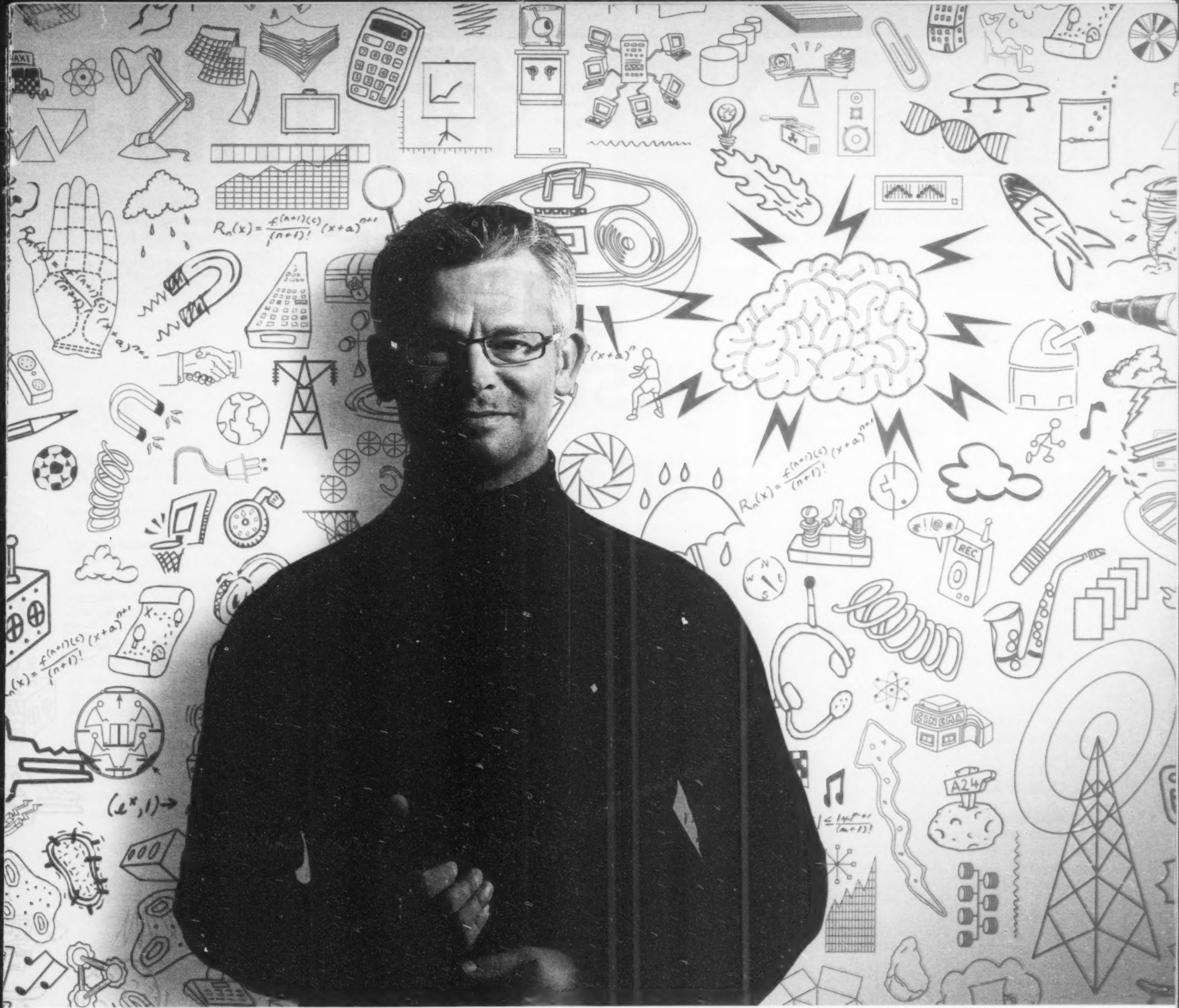
Leaders Wanted/CIO Challenge Series

Challenge #1:

Teach everyone how to innovate with IT.

Solution: Hyperion—your management system for the global enterprise.

Technology drives innovation. That makes you *Chief Innovation Officer.* So, how do you transform *innovation* from a buzzword into a sustainable part of your business? Visionary CIOs are leading the way with Hyperion performance management solutions. With Hyperion, you break down the barriers between finance, operations and planning and align them around a master data set. You give everyone the tools they need to continuously analyze and manage business performance—and invent new ways to improve it. Isn't that what real innovation is all about?



FREE ARTICLE FROM HARVARD BUSINESS REVIEW
How do other IT leaders drive innovation?
Discover new insights and best practices from the Harvard Business Review and Hyperion. Go to **www.hyperion.com/go/leaders**

Hyperion™
The future in sight

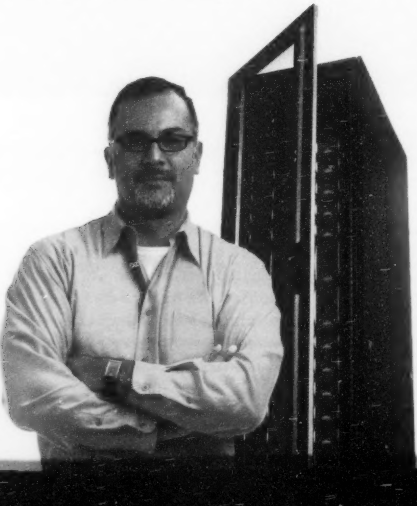
©2006 Hyperion Solutions Corporation. All rights reserved. "Hyperion," the Hyperion logo and Hyperion's product names are trademarks of Hyperion. References to other companies and their products use trademarks owned by the respective companies and are for reference purpose only.

The cost of getting bigger just got smaller.

You need more storage. You don't need more fees or systems to manage. The Pillar Axiom™ storage system lets you add performance and capacity over 300 TB per system, without multiple software license fees. It empowers you to manage data on multiple tiers, whether in SAN, NAS or both, through one simple user interface. Because Pillar delivers top-tier performance and capacity, often for less than what many companies pay just to maintain and operate their storage systems, it can really improve your bottom line.

To hear about our new approach to managing data storage, you owe it to yourself to schedule a half-hour briefing. Call **1-877-252-3706** or visit **www.pillardata.com/smaller**

Learn the truth about networked storage.

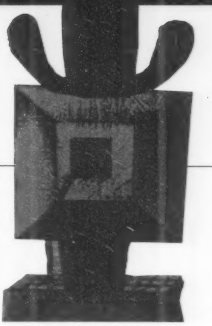


pillar™
DATA SYSTEMS

© 2006 Pillar Data Systems Inc. All rights reserved. Pillar Data Systems, Pillar Axiom, and the Pillar logo are all trademarks of Pillar Data Systems.

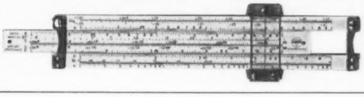
CONTENTS

04.24.06



Geek's Garden

In the Technology section: This week's stroll through the technology landscape examines IBM's spin on magnetism, new imaging chips developed at the University of Rochester, and the role of slide rules in putting a man on the moon. **Page 34**



Turning to Technology

In the Management section: As a confluence of factors transforms the U.S. workforce, IT managers need to be on the lookout for potential talent, regardless of its place of origin. **Page 41**

NEWS

6 **Oracle** is expected to announce today that it will support iSeries-based J.D. Edwards applications beyond 2013.

8 **Linux faces few security threats,** but there are signs that the open-source operating system is less immune to malware than it once was.

8 **New York state** proposes a plan to deploy e-voting machines by this fall in response to a court order to comply with the federal Help America Vote Act.

16 **New Orleans CIO** Greg Meffert fights to keep a free city Wi-Fi network running at high speeds, despite a state law limiting its performance to 128Kbit/sec.

16 **New Hampshire** says FBI analysts found no sign of a data breach on state government server that had run a password recovery program early this year.

20 **Global Dispatches:** Cisco plans to expand its operations in Saudi Arabia; and Nokia looks to broaden the mobile technology development work done at a facility in Chengdu, China.

20 **Q&A: Marcus Courtney**, president of the Washington Alliance of Technology Workers, says offshore outsourcing and increases to the H-1B visa cap are hurting U.S. high-tech workers.

55 **California IT managers** talk about their plans for keeping systems up and running in the event of an earthquake as devastating as the one that hit San Francisco 100 years ago this month.

TECHNOLOGY

27 **Rebuilding the Legacy.** Modernizing mainframe code and deciding what applications to keep on big iron have become major challenges for IT managers.

36 **Security Manager's Journal: These Rules Will Keep Users in Their Place.** Mathias Thurman is counting on the rule of least privilege and separation of duties to keep users out of areas of the network they don't belong in.

38 **QuickStudy: Virtual Machines.** Each of these self-contained operating environments, created by a software layer, behaves as if it were a separate computer. This makes it possible to exploit computing resources more efficiently and isolate applications to improve security and prevent cross-corruption.

MANAGEMENT

44 **Managers' Forum.** When management demands project perfection on an unreasonable time frame, you've got a lot of educating to do, says Paul Glen. And speaking of education, he discusses the differences between executive MBA programs and the garden variety.

46 **Career Watch.** The prospects for a battle over IT talent; helping girls get IT; a new certification for RFID; and the job outlook, eight years out.

48 **Five Steps to More Critical Thinking.** Daily grind getting you down? Here are some easy, everyday exercises to sharpen up and get your brain in gear.

OPINIONS

10 **On the Mark: Mark Hall** reports on a vendor that claims its business systems monitoring technology detects problems in context and in real time.

22 **Don Tennant** downplays news reports that Oracle might buy Novell. But *somebody* should buy Novell, he says, because its tired leadership is taking it nowhere.

22 **Virginia Robbins** lists nine ways to keep your sanity and maximize your retention bonus when you're being downsized.

23 **Bruce A. Stewart** explains what it takes to get innovation in IT organizations, which by nature aren't innovative.

39 **Douglas Schweitzer** warns that the default security settings on wireless routers provided by telecom vendors are inadequate.

50 **Barbara Gomolski** is excited about the opportunities of a global economy, but she's concerned that executives could woefully underestimate what it takes to build a truly global IT presence.

56 **Frankly Speaking: Frank Hayes** says that now that the security mess in New Hampshire appears to be cleaned up, officials need to make sure that everything on servers is documented.

DEPARTMENTS/RESOURCES

At Deadline Briefs	6
News Briefs	10, 14
Letters	23
IT Careers	52
Company Index	54
How to Contact CW	54
Shark Tank	56

ONLINE

WWW.COMPUTERWORLD.COM

Linux Primer for Networkers

OPERATING SYSTEMS: Networking pro Greg Schaffer says you're missing out on some valuable network-monitoring tools if you're too intimidated to set up a Linux system. **QuickLink a8530**

Jail Tales

NETWORKING: Lee Ratzan offers some tips in case you ever go behind the walls for a networking project. Here's one: Don't get caught wearing the wrong color clothes in the wrong area! **QuickLink a8540**

Managing Remote Users

NETWORKING: In Part 2 of her column "Getting a Handle on Remote Users," Sandra Gittlen looks at how centralizing equipment purchases through the IT department pays off in many ways — not the least of which is increased security. **QuickLink a8550**

TechCast: Storage Consolidation

PODCAST: This edition of the *Computerworld* TechCast discusses storage consolidation as a way to help companies manage storage, backups and recovery more efficiently. **QuickLink a8560**

Security Survey

IT MANAGEMENT: How is IT responding to security threats? This *Computerworld* survey of 571 IT professionals sheds light on the security strategies, technologies and management techniques used in enterprise environments. Get the full results in downloadable PDF format. **QuickLink a8570**

Hands On: Apple Remote Desktop 3

MACINTOSH: The latest version of Mac desktop management software offers a number of improvements, says columnist Yuval Kossovsky — and it's a universal binary now. **QuickLink a8580**

ONLINE DEPARTMENTS

Breaking News	computerworld.com/news
Newsletter Subscriptions	computerworld.com/newsletters
Knowledge Centers	computerworld.com/topics
The Online Store	computerworld.com/store

AT DEADLINE

HP Recalls Batteries Reported to Overheat

Hewlett-Packard Co. is recalling 15,700 notebook batteries following reports that they have overheated, causing minor property damage and, in one instance, a minor burn injury. The batteries were manufactured in China during early January 2005 and have a bar-code label that starts with "L3." The batteries were used in several HP notebook models, including the HP Pavilion, HP Compaq and Compaq Presario lines.

Hyperion Buys Maker Of Data-Quality Tools

Hyperion Solutions Corp. has agreed to acquire UpStream Software Corp., a provider of financial data-quality technology. Hyperion plans to offer UpStream's tools as part of its business performance management suite. The tools can help ensure that data required for compliance with the Sarbanes-Oxley Act and other regulations is accurate. Terms of the deal, which is expected to close in two weeks, were not disclosed.

Federal E-health Leader Resigns Post

President Bush's point man for health IT has resigned. David Brailer had led the effort to build a national medical records infrastructure since his appointment to the post of national coordinator for health information technology in May 2004. The project aimed to convince U.S. health organizations to shift from paper-based to electronic medical records. No replacement was named.

Four HP High-End Workstations Debut

HP today is due to unveil four workstations based on the latest dual-core Intel Xeon processors. The Xeon processors offer up to 64GB of memory, high-speed interconnects and improved 3-D graphics support. Pricing plans will be disclosed when shipping starts next month.

Oracle to Extend Support For J.D. Edwards iSeries Apps

Looks to reassure 5,000 customers it inherited in PeopleSoft acquisition

BY MARC L. SONGINI

ORACLE CORP. this week is expected to announce plans to continue upgrading and supporting J.D. Edwards applications running on IBM's iSeries platform beyond 2013. The move is part of an Oracle effort to reassure the 5,000 or so users inherited with its acquisition of PeopleSoft Inc. who run applications on IBM hardware.

The announcement is expected during the Collaborate 2006 user conference in Nashville this week. At the time of the acquisition in 2004, Oracle had pledged to support iSeries-based World and EnterpriseOne applications through 2013.

Several new Oracle users had questioned whether support for the iSeries would continue long after the acquisition, since Oracle and IBM are strong rivals in the database business. Some users had feared that Oracle's next-generation middleware technology, called Fusion, would lead to an effort to wean World and EnterpriseOne users off of IBM hardware, databases and middleware.

Lenley Hensarling, Oracle vice president and general manager of J.D. Edwards EnterpriseOne products, last week said Oracle will continue to support the iSeries-based applications as long as the business remains viable.

"Some of those that are on the iSeries are very religious about that platform," he said.

Hensarling said the company will continue to update the products. For example, Oracle this week also plans to announce EnterpriseOne 8.12, which will offer enhancements for the automotive and the food and beverage industries.

Robert Robinson, business systems administrator at Durr Systems Inc., said this week's moves could encourage users of other applications to buy World or EnterpriseOne. The Plymouth, Mich.-based automotive supplier runs both World and EnterpriseOne ERP applications.

The announcement should also reassure customers already running J.D. Edwards and the IBM hardware that their investments are protected, Robinson said.

The Fusion Option

The indefinite support will be good for customers, but an Oracle application integrated with the Oracle database and middleware could be a better solution for users, according to John Matelski, president of the independent Quest International Users Group, an organization of J.D. Edwards software users. The group is a co-sponsor of the Collaborate user conference.

Matelski, who is also deputy CIO of Orlando, said that migrating to Oracle technology would likely provide most users with the best technology.

"The city of Orlando is going to evaluate all of its options based on features and functionality as it is unveiled," said Matelski.

If Oracle Fusion is optimized to run Oracle software, then the city would likely buy it, he said. The city currently runs EnterpriseOne on iSeries hardware and uses IBM's DB2 database.

"Supporting the iSeries customer was always a cash cow for J.D. Edwards," noted Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif. "These systems are extremely stable and rarely, if ever, need any maintenance or upgrades."

Greenbaum said Oracle's decision to extend support for the system isn't surprising because "the 18% to 22% [estimated average] maintenance fee paid by these customers has a huge profit margin attached to it, so it makes sense for Oracle to support them indefinitely." ▸

New Product

EnterpriseOne 8.12 includes:

- **A new operational sourcing module,** which automates request-for-proposal processes.
- **Modules for agribusiness companies,** including blend management, grower pricing and grower management.
- **Enhanced human-capital management software,** with employee scheduling, and enhanced time and labor and self-service capabilities.
- **A supply chain management application** that can handle transportation shipment sequencing.

Correction

A STORY about Novell Inc. in the April 10 issue's News section ("Novell Struggles to Maintain Utah Base") included incorrect information about the company's founding. Novell originated in 1979 as a hardware vendor called Novell Data Systems Inc. It was relaunched as a software vendor under its current name in 1983, with Ray Noorda as CEO. That same year, the company introduced NetWare, which was created by four classmates at Brigham Young University.

Oracle Unveils Its First CRM OnDemand Release

ORACLE last week brought out Oracle CRM OnDemand, the next release of the hosted offering of the former Siebel Systems Inc.

The new version marks the first use of the Oracle moniker on the Siebel offering. The database company completed its acquisition of the hosted CRM vendor in January.

Oracle CRM OnDemand Release 10 offers updated customization capabilities, improved sales and service features, and enhancements targeting the life sciences and financial services industries, Oracle said.

Bruce Hipkiss, vice president of sales at Specialty Sales and Marketing Inc., said he was most interested in the customization feature when the company started using a beta release of the new hosted version last month.

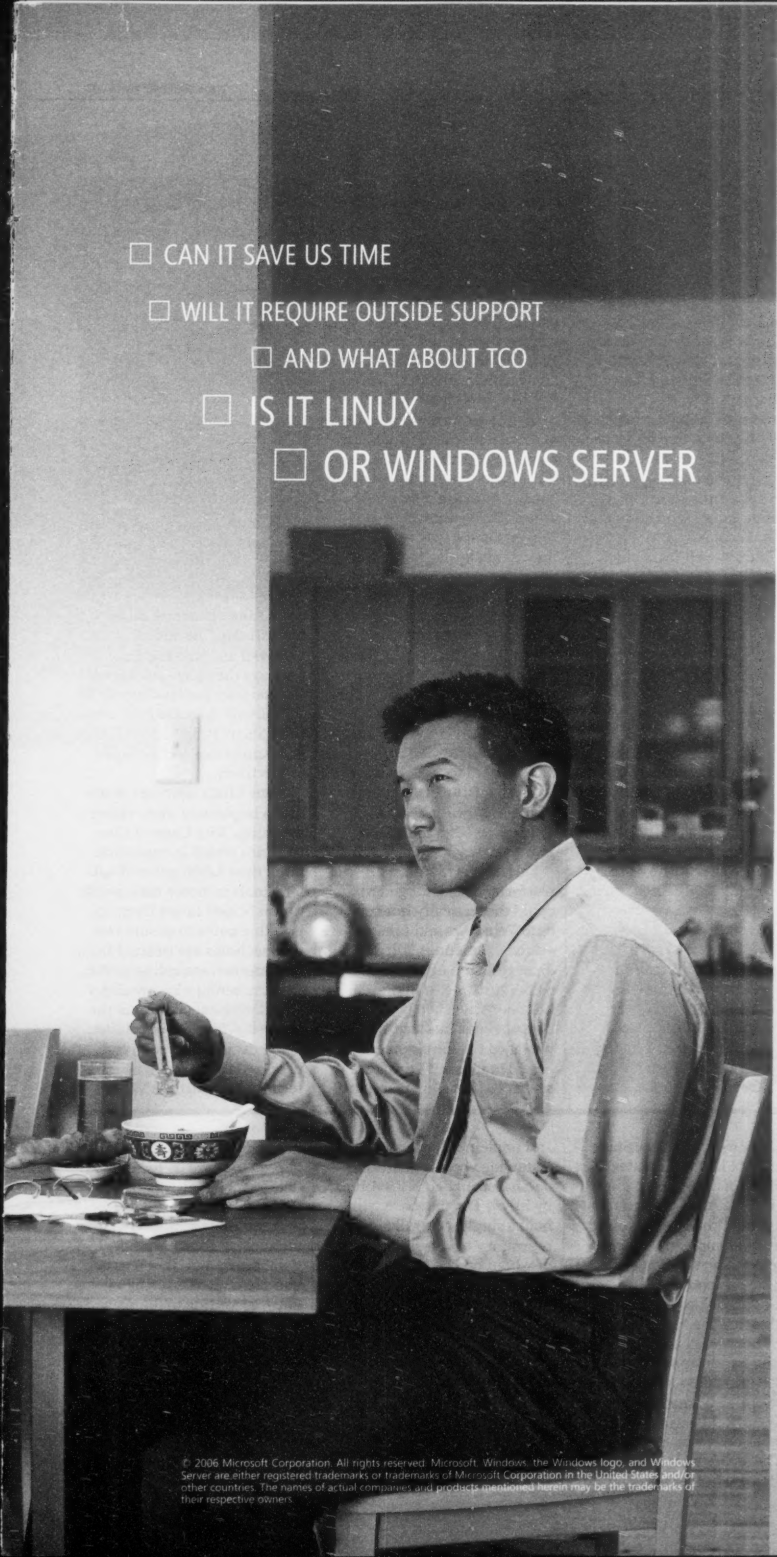
The Mississauga, Ontario-based company provides sales and marketing services for the automotive, heavy-duty truck fleet and industrial aftermarket industries.

Hipkiss said his company has customized the application to allow its workers to import external data into the CRM software. For instance, salespeople can now see financial reports inside customer records.

The new system also automatically provides a single record for distributor- and supplier-related sales information, according to Hipkiss.

Oracle CRM OnDemand Release 10 is available now. The monthly price for the service starts at $70 per user.

– MARC L. SONGINI


☐ CAN IT SAVE US TIME
☐ WILL IT REQUIRE OUTSIDE SUPPORT
☐ AND WHAT ABOUT TCO
☐ IS IT LINUX
☐ OR WINDOWS SERVER

Microsoft

☑ GET THE FACTS.

TELEFLORA CHOSE WINDOWS SERVER OVER LINUX AND UNIX, AND SAVED 35% IN DEVELOPMENT COSTS.

"Developing our new POS system on Windows Server™ 2003 and .NET cost us 35% less than a Linux or UNIX solution, and we're able to deploy new features and new services twice as fast. That gives us and our 25,000 florist customers, a crucial advantage in our rapidly changing industry."
–Jim Siplon, EVP/CTO

teleflora.

For these and other third-party findings, go to microsoft.com/getthefacts

Windows Server™ 2003

© 2006 Microsoft Corporation. All rights reserved. Microsoft, Windows, the Windows logo, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

Security Risks Still Seen As Small for Linux Users

But operating system is slowly becoming a bigger target, some researchers say

BY ERIC LAI

WHEN THE Indiana Department of Education rolled out PCs running Linux to schools last year, it installed open-source antivirus software on the servers connected to the desktop systems to scan incoming e-mail. But it didn't bother to put antivirus tools on the PCs themselves.

"I hate to admit this, but I wasn't worried," said Forrest Gaston, a consultant who is managing the project for the Indianapolis-based agency. And despite heavy Internet usage by students, Gaston's optimism has been borne out thus far. Desktop security "hasn't been an issue," he said.

Linux's relative immunity to viruses, spyware, worms and other malware has long been one of the open-source operating system's key attractions. Exhibitors at the Desktop Linux Summit 2006 in San Diego this week will certainly tout a lack of security threats as a big selling point.

"There are almost no viruses for Linux. Certainly, I've never seen one," said Tom Welch, chief technology officer at Linspire Inc., a San Diego-based desktop Linux company.

In a recent blog entry, Jeffrey Jaffe, Novell Inc.'s chief technology officer, wrote that since joining Novell late last year and switching from Windows to Linux on the desktop, viruses have become "things of the past" for him.

Even companies hawking Linux antivirus products acknowledge that the operating system doesn't suffer from many security woes at this point. "Our product is more used to filtering Windows viruses than actual Linux viruses," said Ron O'Brien, an analyst at Sophos PLC, a security firm in Abingdon, England.

But John Andrews, president of market research firm Evans Data Corp. in Santa Cruz, Calif., said that Linux is slowly becoming a bigger target for attackers. "Windows was the only game in town, but now Linux is offering a more tempting prize," he said.

In a survey of 450 Linux software developers conducted by Evans Data, just under 11% of the respondents said they had found viruses on their systems (see chart). The results, which were released earlier this month, show that more than a third of the affected users reported that they had three or more infections. Those are the highest totals ever reported in the twice-yearly survey.

Earlier this month, a cross-platform virus emerged that could theoretically infect both Windows and Linux systems. Johannes Ullrich, chief research officer at the SANS Institute in Bethesda, Md., said that such proof-of-concept code has traditionally presaged the development of actual malware. "I think we'll see an increase in virus activity as Linux becomes more mainstream," he added.

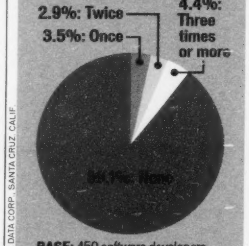
Novell and Red Hat Inc. both say they have enhanced the end-user access controls in their Linux distributions using their Security Enhanced Linux and AppArmor technologies, respectively.

Some Linux users are starting to implement more safety measures. Ritz Camera Centers Inc., which is upgrading more than 4,000 point-of-sale terminals in stores nationwide to run Novell Linux Desktop, is taking pains to ensure that the machines are isolated from the Internet, according to Bob O'Hern, senior vice president of information systems at the Beltsville, Md.-based retailer.

For example, he said, end users won't be able to use the terminals to surf the Web. ◗

Security Watch

How many times has your Linux system been infected by a virus?



BASE: 450 software developers surveyed this spring, as part of a survey done twice yearly

NOTE: Percentages do not add up to 100 because of rounding.

SOURCE: EVANS DATA CORP., SANTA CRUZ, CALIF.

Linux Vendors Rally Around Server, Desktop Specs

MORE THAN a dozen technology vendors, including IBM, Red Hat Inc. and Novell Inc., plan to support an integrated server and desktop Linux standard that's being unveiled by Free Standards Group Inc. at the Desktop Linux Summit 2006.

The FSG, which already has crafted a server-level specification called the Linux Standard Base, announced plans for a desktop version of the standard last October. The two specifications have now been integrated into Version 3.1 of the Linux Standard Base, which the FSG is due to release at this week's conference.

The combined standard should make it easier for application developers "to target the complete Linux platform," the group said, adding that it hopes the simplified development capabilities will help eliminate "a major hindrance for Linux desktop adoption."

Efforts to convince more software developers to create Linux versions of their desktop software have also been stymied because Linux supports both the GNOME and KDE desktop environments, making it hard to develop one piece of software that will run on all versions of Linux.

"The problem with standards on Linux is that there are currently too many of them," said Gregory Raiz, president of Raizlabs Corp., a software company in Brookline, Mass.

It will take hard work to create a standard that is compatible with both KDE and GNOME, said Bruce Perens, vice president of professional services at SourceLabs Inc. in Seattle.

"How they're going to pull it off will be interesting," Perens said. In the end, Linux providers may be forced to simply choose one of the desktop environments, he added.

– ROBERT McMILLAN, IDG NEWS SERVICE

New York Develops Plan to Comply With E-voting Law

BY MARC L. SONGINI

The state of New York, under orders from a federal court, earlier this month submitted to the U.S. Department of Justice a plan for complying with the federal Help America Vote Act.

The DOJ had filed a lawsuit in federal court on March 1, charging that the state was not in compliance with HAVA. The statute dictates that each state create a database of eligible voters and that every voting precinct in the country have at least one handicapped-accessible e-voting machine.

The federal legislation called for a Jan. 1, 2006, compliance deadline.

On March 23, the U.S. District Court in Albany ordered that the state come up with a plan for adhering to the law.

The plan submitted to the court by the New York State Board of Elections creates a set of milestones for completing testing, training, procurement and other processes required to install handicapped-accessible e-voting systems and for building a voter database.

The plan also includes a pledge that the New York elections board will acquire and certify handicapped-accessible voting devices in time for the Sept. 12 primary election. Currently, the state uses mostly lever-activated machines.

The state's plan also includes guidelines for creating and implementing an interim statewide voter-registration database, dubbed NYSVoter I, by July 1. The database will hold a single, centralized repository of voters, each of whom will be assigned a unique identifier.

For verification purposes, the new database will be linked with databases from the New York Department of Motor Vehicles, the U.S. Social Security Administration and other federal agencies.

New York's plan is to pattern the voter database after one implemented in the state of Washington, which has agreed to share its technical details free of charge.

Ultimately, NYSVoter I will serve as the underlying technology for a permanent database system that will be completed in the spring of 2007, according to the plan.

A spokesman from the New York elections board said in an e-mail last week that the board is awaiting a response from the court and the DOJ about the plan; he declined further comment. A DOJ spokesman also declined to comment on the state's plan. ◗

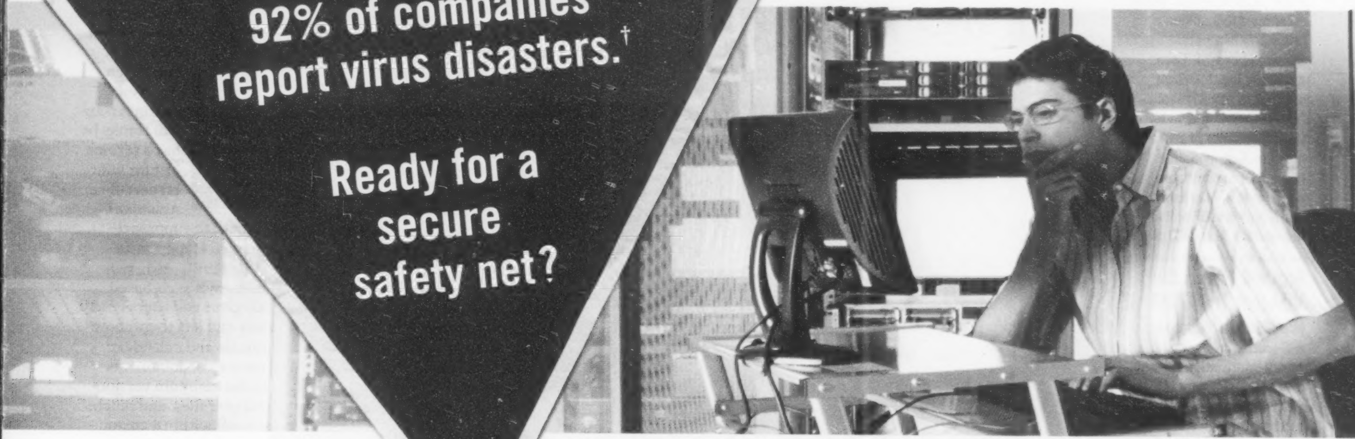
IT ALERT:

92% of companies report virus disasters.[†]

Ready for a secure safety net?

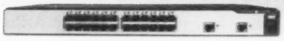
Insight

IT For The Way You Work™



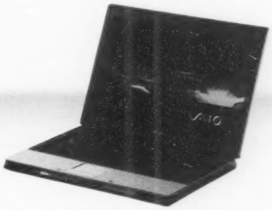
YOU CAN MAKE IT HAPPEN WITH INSIGHT

Certified Systems Engineers ▾ Leading Technology ▾ Leasing Programs



CISCO® ASA 5510 Security Appliance
ASA5510-BUN-K9

- Market-proven firewall, IPS, network anti-virus and VPN capabilities
- Adaptive identification and mitigation services architecture providing granular policy control and future services extensibility
- Reduced deployment, operating costs and complexity



SONY® VAIO BX563B Notebook
VGN-BX563B

- Intel® Pentium® M 1.73GHz processor, 512MB DDR II SDRAM
- Multi-Function Bay, enabling simple swapping out of powerful peripherals
- Integrated Bluetooth® technology
- Integrated biometrics fingerprint sensor

FUJIFILM
Ultrium3
LTO

FUJI LTO 3 Storage Media
26230010

- Reliable high-capacity storage and long archival life
- 400GB capacity (native)
- WORM (Write Once Read Many) functionality
- Fujifilm offers a customized barcode labeling service, applied directly to tape within Fuji's state-of-the-art manufacturing facility

insight.com/cw ▾ 800.998.8052

[†]Cyber Security: A Crisis of Prioritization, February 2005.

Source Code: AD021
Insight and the Insight logo are registered trademarks of Insight Direct USA, Inc. IT For The Way You Work is a trademark of Insight Direct USA, Inc. All other trademarks, registered trademarks, photos, logos and illustrations are property of their respective owners. ©2006 Insight Direct USA, Inc. All rights reserved.

Cisco Systems | Premier Certified Partner SONY FUJIFILM

BRIEFS

Microsoft, Autodesk Lose Patent Suit

A Michigan man has been awarded $133 million by a Texas jury in a patent dispute against Microsoft Corp. and Autodesk Inc. Microsoft was ordered to pay $115 million and Autodesk $18 million to David Colvin, founder of z4 Technologies Inc. Colvin claimed two of his antipiracy software patents were used in Microsoft's Office and Windows XP software and Autodesk's AutoCAD programs.

Novell Buys Security Vendor in $72M Deal

Novell Inc. has purchased e-Security Inc., a maker of security information management and compliance monitoring software, for $72 million. Novell next month will start selling e-Security's Sentinel 5 product, which provides IT organizations with a single, real-time, cross-enterprise view of hacker attacks and other security violations. New versions of Novell's own security software will also ship next month.

IBM Revenue Drops With Sale of PC Unit

IBM credited strong sales of its middleware and microelectronics products for a 21% gain in first-quarter profit. But the company cited the sale of its PC unit to Lenovo Group Ltd. for a 10% decline in first-quarter revenue.

IBM BY THE NUMBERS

REVENUE		
Q1 '06	$20.7B	$1.7B
Q1 '05	$23B	$1.4B

Flextronics Sells Software Business

Singapore-based Flextronics International Ltd. plans to sell its software development business to an affiliate of buyout firm Kohlberg Kravis Roberts & Co. for $900 million. The bulk of the software business unit is based in India, but it has offices worldwide, according to Flextronics. In all, the unit has 6,100 employees.

[ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL]

I SEE A TALL DARK SPIKE IN YOUR SYSTEMS FUTURE!
NETUITIVE
YIKES!
CPU SPIKE

MATTHEW FAULKNER

Monitor Business Services in . . .

. . . real time and in context. Nicola Sanna dismisses much of the systems monitoring technology available today. "They monitor components and compare [current] conditions to historical data," says Sanna, CEO of Reston, Va.-based Netuitive Inc. But that won't give you a true picture of the condition of your business systems, he says. "You also need the context in which the components operate," Sanna says, noting that data sources and the data streams among those sources "change constantly over time." That means your business services monitoring tools had better work in real time. Netuitive SI and Service Analyzer software does just that, Sanna claims. The two products learn and then define normal systems behavior based on time of day, day of the week and other factors. Sanna says that because the software runs in RAM, it can flag abnormal conditions based on events happening in the here and now — not by looking back from the hereafter. The tools also predict how systems will function over the next two hours so IT can quickly redeploy resources to handle spikes and troughs in computing demands. By June, the company will upgrade Netuitive SI to include support for monitoring how seasonal events, such as the Christmas shopping rush, affect IT operations.

SANNA: Context is needed for business service monitoring.

Lock down your network from . . .

. . . the perimeter to the core. Automating network access control policies remains difficult, says Brett Helsel, CEO of Lockdown Networks Inc. in Seattle. Agent software is problematic because you can't install it on everything that attaches to your network, Helsel contends. And, he says, intrusion-prevention systems are potential bottlenecks and endemic sources of false positives. Helsel's alternative is the Lockdown Enforcer appliance. He claims that the Enforcer knows all the users on your network, their access rights, what devices they're using and where they're using them — meaning you can apply different access policies based on user location. The appliance's software is due to be upgraded on May 15 with support for Mac OS X. Pricing starts at $24,995 for a model that can handle up to 2,000 users.

The ENFORCER protects your perimeter, says Lockdown Networks.

It's OK to outsource IT security, just . . .

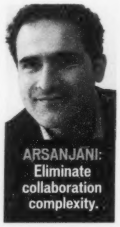
. . . like anything else. David Grant, director of product management at Watchfire Corp. in Waltham, Mass., thinks there are lots of reasons to put IT security in the hands of strangers. For one thing, he says, you may not have internal expertise in areas such as developing and deploying secure applications. That's where Watchfire's AppScan service comes in. Grant claims that it can test Web-based apps over a virtual private network to see if they have buffer overflow problems or other security holes. Starting at $4,500 per month, the service is continually being updated to monitor for "new types of hacks," Grant says. "It's a bit of an arms race between IT and hackers."

95%

FBI estimate of the percentage of companies that had apps attacked in 2005.

Collaborate without the complexity . . .

. . . of supporting a collaborative app. Small and midsize businesses, and even large ones, often struggle with deploying and managing big programs like Lotus Notes — so much so that many of you don't even try. Well, Farzin Arsanjani thinks he has a service just for you: HyperOffice. Arsanjani, president of the appropriately named HyperOffice Inc. in Rockville, Md., says his company's Web-based service gives end users e-mail services and lets them share documents and calendars; link messages, documents and tasks; maintain version control over files; and much more — all within a customized portal. By mid-May, Outlook users will be able to share their calendars with one another and with HyperOffice calendar users without the need for Exchange, according to Arsanjani. Pricing averages $7 a month per end user.



ARSANJANI: Eliminate collaboration complexity.

Archive all messages that are stored . . .

. . . electronically, at close to real time. Arthur Riel, chief technology officer at Lighthouse Global Technologies LLC in Stamford, Conn., spent five years developing e-mail compliance tools in the financial services industry. Now Riel claims that he has the tool he always wanted when he was inside IT: E-Trail Digital Archive. Lighthouse's software captures and indexes data in near real time, Riel says. It works with messages and attachments in Exchange, Notes or any POP3 mail system. The archive is stored in a database and linked to your network directory so you can search against a specific individual's content or an entire group's. Lighthouse plans to go public with E-Trail in mid-May. Pricing starts at about $10,000. ▸

Confessions of the World's Most Demanding CIOs.

"We have met the competition, and it is us."

"An OOCL container ship is only the most visible element of an enormously complex enterprise that moves goods from, say, Shanghai to Kilkenny.

"With our IT, we do that better than our competitors. So we compete against our own benchmarks.

"HP helped us get there – to migrate from mainframe to open systems, and to adopt standards-based technology for real-time communication with partners. So OOCL can adapt to market-driven changes much faster than other carriers.

"Today, IT costs have dropped sharply, and we project double-digit growth for the next five years.

"Now we'll try to beat that."

–Ken Chih, CIO

Make change work for you. Visit www.hp.com/adapt

oocl

Solutions for the adaptive enterprise.

hp invent

©2004 Hewlett-Packard Development Company, L.P.

Continued from page 1

SOA

pinch of the transition.

This and an earlier, less-complex SOA project are already presenting challenges to Wachovia developers, who must adjust their mind-sets from the traditional waterfall development approach to a more iterative one, according to Harry Karr, strategic architect for the retail banking division at Charlotte, N.C.-based Wachovia.

Using the waterfall approach, developers build monolithic applications in one fell swoop. The iterative approach calls on one group to develop a service, for example, while another builds a client to consume a service, explained Karr.

To ease the taxing transition for its application development group, the division brought in new tools for designing a development process and created new IT roles.

"SOA is a set of best practices, a discipline you have to follow," said Jason Bloomberg, an analyst at ZapThink LLC in Baltimore. "For the developer, this means there are new rules they have to follow. They don't want to follow any rules."

Tools for Change

Wachovia used IBM's Information FrameWork — a set of business models and an information architecture blueprint — in its project to build common processes from services that can be used by all customer channels.

"We haven't really mastered the business process part of it," Karr acknowledged. "We're trying to figure out how to do a more iterative approach but also outsource. If we had the business processes modeled ahead of time, that might help us."

In addition to starting the SOA projects, Wachovia plans to begin outsourcing a significant portion of its development and operations staff over the next year.

The bank has also tapped Flashline Inc. in Cleveland for its services registry, repository and life-cycle management tools. Those should help its developers model the processes, show dependencies and build reports to help manage and understand the effect of the changes, Karr said.

The project continues to evolve as managers hunt for methods to ease the work. For example, Wachovia's IT division last week added a connectivity layer to its architecture. Karr said that the new layer, an enterprise service bus (ESB) from IBM, can handle message orchestration, transformation and routing.

"We're trying to figure out what types of things we have to have in place so the outsourcers can build in this distributed environment," Karr said. "[With the ESB], we can put out some dummy services for the outsourcers to use to test their services with."

The chief architect of enterprise architecture at a large U.S.-based financial institution, who asked not to be named, said recently hired developers there are embracing the organization's shift to SOA.

At the same time, veteran mainframe and legacy experts are bucking the change. The plan to use SOA technology "has not been easy for our developers," the architect said.

To ease the transition, the financial institution created a grass-roots community for its 1,200 developers to share best practices and connect with the owners of Web services.

In addition, the organization is helping the mainframe and legacy developers fine-tune their skills while it hires new developers for the SOA project, the architect added.

The institution plans over the next 18 months to create an SOA with sufficient security and performance to extend Web services beyond the firewall, the official said.

ZapThink's Bloomberg said that developers often find the cultural changes associated with a move to an SOA more taxing than the technology associated with the shift.

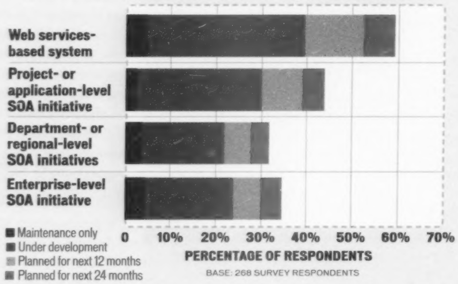
"To move to SOA requires organizational changes across IT and even into lines of business," he said. "Often, the developers have to work with people they may not have worked with much before."

As Cary, N.C.-based Railinc has taken on more SOA projects, the Association of American Railroads subsidiary has created training programs for both developers and recipients of the services to show the benefits of the technology.

Over the past two years, Railinc, which provides supply

Continued on page 14

Which of the following IT initiatives does your organization have under way or planned?



SOURCE: IDC, FRAMINGHAM, MASS., AUGUST 2005

Simplifying SOA

Steps to make SOA adoption easier:

- **Improve processes.** Evaluate the maturity of change management, resource management and incident management processes to define best practices.
- **Improve demand and portfolio management.** SOA can worsen the imbalance between demand for and supply of IT services; IT shops must learn to reject requests based on business information.
- **Clearly define an enterprise architecture.** A strong architecture can help an organization maintain SOA's promised agility while adapting to meet changing requirements.
- **Improve business service management.** Define and manage key services provided by IT; measure IT performance in the context of those services.

SOURCE: AMR RESEARCH INC., BOSTON

New Job Functions Emerge With SOAs

BUSINESS ARCHITECT. Process analyst. SOA enterprise architect.

These are the job titles various organizations are applying to an emerging role being filled by those well versed in business and technology to oversee service-oriented architecture projects.

The holder of the new job will be charged with identifying services that can be reused across an enterprise, finding services in a repository, simulating scenarios for the processes to run and determining metrics to measure the effectiveness of an organization's processes.

The position will be part of either central IT or a line of business, depending on the company, executives said.

Some IT managers interviewed last week said they are training internal business analysts to take on the new role. However, several also noted that the job requires more technical expertise than most business analysts have.

The chief architect of enterprise architecture at a large U.S.-based financial institution, who asked not to be named, said the new role, called business architect in that organization, is starting to spread through the institution's lines of business as they transform legacy applications to services running within an SOA.

The units are using business architects to perform in-depth reviews of processes, the architect said.

"They are modernizing their current business processes and restructuring or re-architecting the business first," the architect said. The organization first turned to outsourcing firms to take on the role, but now the "business lines are cultivating talent that historically have been business analysts."

Dennis Byron, an analyst at IDC, said he expects more IT organizations to add such a position, which IDC calls a process analyst, to oversee the creation of composite applications from services rather than by coding.

"We expect to see a trend where people within sales, human resources and manufacturing departments will become almost like the developers," he said. "They will understand the business process. They will drag and drop flowchart stuff around and automatically change the [process] flows under the covers."

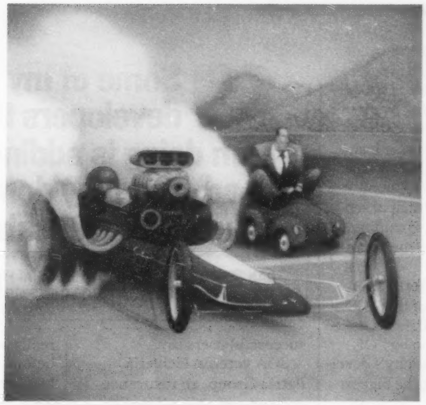
Bhaskar Chakrabarti, principal IT architect at JPMorgan Chase & Co. in New York, said he expects that the emerging IT role, which his company calls an SOA enterprise architect, will team with business architects and process analysts to champion SOA initiatives and guide the organization toward an SOA.

"For [an SOA] to shape up, an SOA champion is definitely needed [to] shepherd the entire forum of SOA and try to sell the benefits to business, and bring together business and IT," he said.

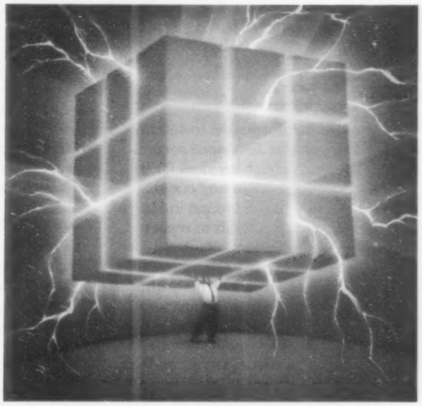
Although JPMorgan has for the past several years built point-to-point Web services to integrate applications, the company won't begin to build new business processes out of Web services until next year, Chakrabarti said. At that time, he added, the company will be creating the SOA enterprise architect job title.

– HEATHER HAVENSTEIN

Innovations by InterSystems



Rapid development with robust objects



Lightning speed with a multidimensional engine

Easy database administration

Massive scalability on minimal hardware

The Objects Of Your Desire.

Caché is the first multidimensional database for transaction processing and real-time analytics. Its post-relational technology combines robust objects and robust SQL, thus eliminating object-relational mapping. It delivers massive scalability on minimal hardware, requires little administration, and incorporates a rapid application development environment.

These innovations mean faster time-to-market, lower cost of operations, and higher application performance. We back these claims with this money-back guarantee: *Buy Caché for new application development, and for up to one year you can return the license for a full refund if you are unhappy for any reason.** Caché is available for Unix, Linux, Windows, Mac OS X, and OpenVMS – and it's deployed on more than 100,000 systems ranging from two to over 50,000 users. We are InterSystems, a global software company with a track record of innovation for more than 25 years.

InterSystems
CACHÉ®

Try an innovative database for free: Download a fully functional, non-expiring copy of Caché, or request it on CD, at **www.InterSystems.com/Cache17A**

* Read about our money-back guarantee at the web page shown above.

© 2006 InterSystems Corporation. All rights reserved. InterSystems Caché is a registered trademark of InterSystems Corporation 04-06 CacheInno17CoWo

BRIEFS

Unisys to Lay Off 3,600 After Loss

Unisys Corp. announced plans to cut its workforce by 3,600 people after reporting a $28 million first-quarter loss on flat sales. The cutbacks will be spread among its worldwide workforce.

UNISYS BY THE NUMBERS		
	REVENUE	[illegible]
Q1 '06	$1.4B	($28M)
Q1 '05	$1.4B	($46M)

Microsoft to Preview New WSUS Version

Microsoft Corp. plans to offer its users a peek at the next version of its Windows Server Update Services software at this week's Microsoft Management Summit in San Diego. WSUS 3.0, a free alternative to Microsoft's Systems Management Server, can be used to control the deployment of Microsoft patches and security updates. The version includes a new interface, according to the company.

Intel Cites Slump in PC Sales for Poor Q1

Intel Corp. reported a 5% decline in first-quarter revenue and a 41% drop in profits, blaming a slump in PC growth rates. Industry experts also cited increasing competition from Advanced Micro Devices Inc.

INTEL BY THE NUMBERS		
	REVENUE	[illegible]
Q1 '06	$8.9B	$1.3B
Q1 '05	$9.4B	$2.2B

BEA, HP Unveil Joint RFID Offering

BEA Systems Inc. and Hewlett-Packard Co. have agreed to work together to create new smart-tag systems to help businesses streamline their supply chain operations. The package of products and services will include BEA's WebLogic RFID technology and HP's RFID implementation expertise and global sales and support network. The joint offering targets manufacturers, retailers, and distribution and transportation companies.

Continued from page 12

SOA

chain information to 460 railroads, has developed several external Web services for its clients — including one that went into production in March to allow railroads to report rail-car repairs.

The latest initiative includes various project teams within IT and the lines of business that are creating reusable services for application development, said Garry Grandlienard, Railinc's IT director of enterprise architecture. The project is slated for completion by year's end.

The training sessions aim to show developers and managers the benefits of building an SOA and why they should buy into the concept, he said.

"They may have to help build something today, but maybe later this year they may be the recipient of the service," Grandlienard said. "We have to help them see the bigger picture of why this is a good thing to invest in."

The state of Kentucky used senior developers in its early SOA projects and is forming an integration governance group and a competency center to extend training to more of its staff.

The state has built various applications using a service-oriented approach. Among them is an enterprise system that will allow the state's revenue department to streamline the collection of delinquent taxes and a service to allow the U.S. Department of Justice to query Kentucky's sex-offender registry.

Kentucky's IT shop is now moving to tackle its newest SOA challenge — identifying opportunities to re-engineer business processes and creating the associated supporting infrastructure, said Ashiq Zaman, branch manager in the Office of Application Development in the Commonwealth Office of Technology.

The District of Columbia earlier this year went live with an SOA-based system called CapStat, which uses Web services to help emergency command centers in Washington and surrounding areas coordinate responses in the event of a natural disaster or terrorist attack. The district also has a program called DCStat that uses Web services to monitor the delivery of municipal services. It has been expanding that program since the beginning of the year.

Despite those efforts, Dan Thomas, director of the DCStat program in the district's Office of the Chief Technology Officer, noted that the city's developers are still "not the biggest believers" in SOA. "Some of my junior developers think all I am doing is adding overhead, and they don't see the value of the reusability yet," Thomas said.

To address such skepticism, his group developed a metadata engine to help track down services as they are mixed and matched to build new applications. The engine associates metadata with data to be used in a service as it is pulled from a source system.

> **“ Some of my junior developers think all I am doing is adding overhead, and they don't see the value of the reusability yet.**
>
> **DAN THOMAS,** DIRECTOR OF THE DCSTAT PROGRAM IN THE DISTRICT OF COLUMBIA'S OFFICE OF THE CHIEF TECHNOLOGY OFFICER

The Final Payoff

Despite the technical and cultural challenges of SOA, the returns can be substantial, successful users say.

SOA veteran Helvetia Patria Group, an insurance company in St. Gallen, Switzerland, has seen a 201% return on investment since launching its SOA six years ago. Helvetia officials said the SOA project cut IT costs for the company's Internet-based businesses by 59%.

Helvetia overcame the "tough exercise" of bringing developers on board by using a change management program from Hewlett-Packard Co., said Didier Beck, director of Helvetia's eBusiness Center.

Beck said the HP tools and services helped developers integrate 15 systems into a centralized SOA platform. "The way we are working today is really very different because before, there wasn't any contact between the different subsidiaries — they had all their own development processes and tools," Beck said. "The consequences and impact were really quite high."

The new development processes included centralizing change management and software-release schedules, Beck said. In addition, the company now provides all new developers with six to 12 months of training at its eBusiness Center, where it centrally manages the SOA.

"An SOA implementation is really a journey," Beck said, "and you have to invest a lot before you can reach a new agility level." ▸

Disparate IT Groups Joining Forces in SOA Projects

THE MOVE to service-oriented architectures is requiring development groups in some companies to forge closer relationships with IT operations and deployment groups.

For example, American Modern Insurance Group Inc. must bring together its developers and the team responsible for deploying applications as it continues an SOA project that will replace two Unisys ClearPath mainframes and two databases with a single IBM zSeries mainframe running the DB2 database.

The $62 million project will also replace a core legacy Cobol application, said Patrick Law, vice president of infrastructure at the Amelia, Ohio-based insurer.

Law said the two groups must decide together how best to "package" the services to gain optimum performance and reliability. In addition, a cooperative effort is needed to determine which services will run on specific platforms, such as host servers, application servers and portals. "In the old days, there was no such concept as needing to worry about packaging, because everything [was] put on one machine and run," he said.

T-Mobile International AG is working to ensure cooperation between IT development and operations groups for an SOA project set to start in May. The effort is aimed at creating a common authentication and authorization services layer for a micropayments application.

Such cooperation between the groups would also ease the process of executing several similar SOA projects that are slated to begin over the next two years, said Alastair Wade, principal consultant at Buffalo, N.Y.-based Computer Task Group Inc., which is working with Bonn-based T-Mobile on the project.

Wade said that the relationship between the T-Mobile IT development and operations groups had to change because the SOA project will allow applications to run on multiple platforms, such as a hardware appliance from DataPower Technology Inc. that helps secure the processing of the messages within the SOA.

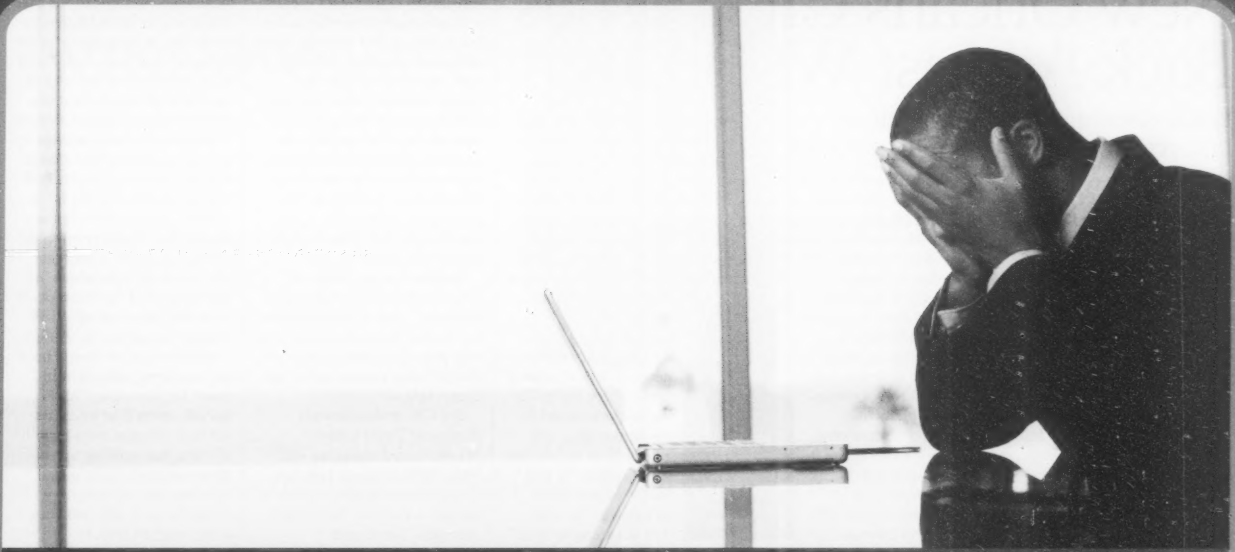
"What you have there is a platform in a box – it is not just a piece of hardware," Wade said. While IT operations maintains the system, "the application development department [also] needs to be involved with this," he said.

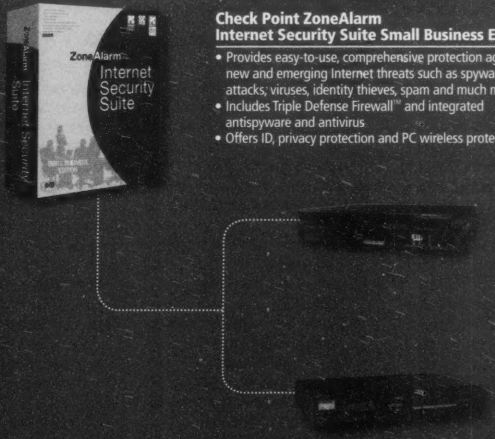
For example, Wade said, developers need to gain knowledge about networking and components of the network from operations staff.

– HEATHER HAVENSTEIN

Remember when security meant antivirus software?

(Now, you need a whole solution.)





Check Point ZoneAlarm Internet Security Suite Small Business Edition

- Provides easy-to-use, comprehensive protection against new and emerging Internet threats such as spyware, hacker attacks, viruses, identity thieves, spam and much more
- Includes Triple Defense Firewall™ and integrated antispyware and antivirus
- Offers ID, privacy protection and PC wireless protection

Check Point SOFTWARE TECHNOLOGIES LTD.
We Secure the Internet.

5-user
$\$209^{99}$
CDW 894169

Cisco® ASA 5510 Security Plus Appliance

- Purpose-built appliance that combines best-in-breed security and VPN services with an innovative Adaptive Identification and Migration (AIM) architecture
- Provides proactive threat defense that stops attacks before they spread through your network, controls, network activity and application traffic
- Includes firewall, Intrusion Prevention Service (IPS), network antivirus and VPN capabilities

$2984.99 CDW 792590

Cisco Systems Premier Certified Partner

Cisco PIX® 501 Firewall

- 3DES bundle with integrated 4-port 10/100BASE-TX switch
- Delivers high-performance security for small networks or remote offices
- Includes a stateful inspection firewall, VPN and intrusion protection

$363.99 CDW 337727

Cisco Systems Premier Certified Partner

The Security Solutions You Need When You Need Them.
Security solutions for your network have always been complicated. But these days, it seems every time you turn around there's a new and more complex security issue to address. CDW understands these challenges, but more importantly, we know that they will continue to evolve. Call us today and let our account managers and security specialists help you develop a multi-tiered system that covers gateway, server, client, and mobile security. Then get on with everything else you've been putting on hold.

CDW
The Right Technology. Right Away.
CDW.com • 800.399.4CDW
In Canada, call 888.898.CDWC • CDW.ca

Includes 1-year Maintenance and updates. Offer subject to CDW's standard terms and conditions of sale, available at CDW.com. © 2006 CDW Corporation

New Orleans CIO Pushes Back Against Wi-Fi Law

Local telecom providers want to enforce slowdown of public network

BY MATT HAMBLEN

AFTER SURVIVING Hurricane Katrina and helping to coordinate recovery efforts in New Orleans following last year's devastating floods, the city's top IT manager is now fighting to keep a free municipal wireless network functioning at high speeds.

The public Wi-Fi service, set up with $1.2 million worth of equipment donated by Intel Corp. and Tropos Networks Inc., has been "a lifeline" for New Orleans, said Greg Meffert, the city's CIO and chief technology officer. He added that the network is being used by residents, businesses, public safety officials and building inspectors, who have vastly increased the number of inspections they're doing.

The Wi-Fi network currently runs at speeds of up to 512Kbit/sec. and can be accessed in a 1-square-mile section of central New Orleans. The city plans to expand its coverage area via a deal that's being finalized with EarthLink Inc., Meffert said.

MEFFERT: Slowing New Orleans' Wi-Fi "is like kicking a guy when he's down."

ASA MATHAT

But vendors that offer broadband Internet services oppose keeping the free network's performance levels above 128Kbit/sec. once the state of emergency in the city is lifted. Telecommunications lobbyists point to a 2-year-old state law that sets standards for broadband competition, including the 128Kbit/sec. speed limit on municipal networks.

Meffert said slowing down the city's network would make it "useless" for the building inspectors and for many average users. The push to reduce the Wi-Fi speeds "is like kicking a guy when he's down," he said. "I'm not going to do it."

Bills filed in the Louisiana legislature to let New Orleans retain its current performance levels have failed thus far, but others are pending, Meffert said. He wants to take the matter before a judge, but city attorneys have advised him that any legal action must be brought by citizens claiming that they would be adversely affected by a slowdown. "I guess you could call it a potential fight, but I don't know where this ends," he said.

Meffert has met with officials from Cox Communications Inc., one of the city's two local telecommunications service providers, and he said he thinks "they realize we're not competing with them."

But Cox spokeswoman Stephanie Davis said the Atlanta-based company still backs the Louisiana law that limits the throughput of municipal networks. "Nothing's changed," Davis said.

BellSouth Corp., the other local telecommunications carrier, sent a letter to Meffert two weeks ago saying that it "is not trying to shut down" the city's Wi-Fi network but wants it to comply with the current law. Merlin Villar, regional director of BellSouth's New Orleans operations, confirmed last week that the letter represents BellSouth's position on the issue.

Even though New Orleans Mayor Ray Nagin previously worked as general manager of Cox's local operations, he has supported the attempts to preserve the existing Wi-Fi speeds, according to Meffert.

Meffert said he would back any residents who fight in court for the higher Wi-Fi speeds, even if he loses his CIO job. (Nagin, who appointed him, was seeking a new term as mayor in an initial election held on Saturday.) "If I have to go to jail over this, I will," Meffert said. ▶

New Hampshire Says FBI Probe Shows No Sign of Data Breach

IT staffer cleared to return to work

BY TODD R. WEISS

FBI computer forensics analysts have concluded that a suspect password-recovery program found on a New Hampshire government server in February was never activated, leading state officials to say that they don't think any credit or debit card data was stolen from the system.

In addition, a state IT worker who was placed on paid leave while the potential security breach was being investigated has now been cleared to return to work. Douglas Oliver, a Web middleware engineer in the state's Office of Information Technology, said last week that he had received a letter from OIT officials telling him he could start working again on April 25.

Oliver, who in March had identified himself as the unnamed worker put on leave, declined to comment last week about the contents of the reinstatement letter he received. But he said he does plan to go back to work this week.

New Hampshire Attorney General Kelly Ayotte announced the results of the FBI's computer forensics probe on April 14. "As a result of this finding, the state has concluded that it is very unlikely that any credit card or debit card information was accessed by identity thieves," Ayotte said in a statement.

A Wide Investigation

The FBI, the U.S. Department of Justice and New Hampshire officials began investigating the potential security breach after Cain & Abel, a password recovery program that can be misused by malicious hackers, was found on the state server during a routine security check.

The New Hampshire Division of Motor Vehicles and the state's Veterans Home were using the server to transmit financial information, and the New Hampshire Liquor Commission used it as a backup for sales transactions. The server held credit and debit card numbers, but no other personal information was stored on it, according to state officials.

Oliver said last month that as a member of an OIT security audit team, he installed and used a collection of software tools, including Cain & Abel, in order to test the ability of the state's IT security to withstand real-world intrusions. The work was done with the knowledge and endorsement of OIT managers, Oliver said.

New Hampshire CIO Richard C. Bailey Jr. declined to comment on Oliver's reinstatement last week. "We don't go into the individual status of employees," Bailey said.

Pamela Walsh, a spokeswoman for New Hampshire Gov. John Lynch, said that the FBI's investigation into the installation of Cain & Abel on the server is ongoing. ▶

DOCUMENTATION NEEDED

Our Take: The situation in New Hampshire shows that everything done on production servers should be documented, Frank Hayes says. **Page 56**

Oracle Releases Patches, Password Tool

ORACLE CORP. last week released 14 software patches that address security vulnerabilities in its databases, application server software and other products. As part of the quarterly software update, it also released a tool designed to ferret out commonly used default passwords that could be misused by hackers.

Earlier versions of Oracle databases included well-known default passwords and usernames, said Darius Wiles, manager of security alerts at Oracle. Those accounts have been locked down in current releases, but they may present a problem to users who still rely on older databases or have upgraded from an older version that included the default passwords, he added.

Oracle10g databases that have been upgraded from Oracle7, Oracle8i or Oracle9i may include the default accounts, according to a note made available last week to subscribers to the vendor's MetaLink support service.

The password scanner is a SQL script that scans a database and then prints out the names of the default accounts if they're unlocked, according to Wiles. "This tool is designed to catch those instances and then explain to customers the right thing to do to secure their systems," he said.

Several of the bugs that Oracle is patching as part of the quarterly update could be easily exploited in a widespread manner, according to the software vendor.

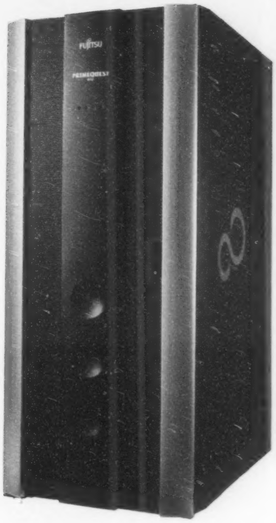
Of particular interest is a fix for a previously disclosed vulnerability in the PL/SQL gateway software used to integrate Oracle's database with Web-based applications.

Security researcher David Litchfield published a fix for that problem in January, but Oracle had warned users that it could break a number of other Oracle products.

There are still a large number of unpatched bugs in Oracle products, claimed Cesar Cerrudo, CEO of Argeniss, a security research firm in Buenos Aires. "We have more than 50 unpatched vulnerabilities on Oracle's database server," he said. "The oldest unfixed vulnerability we have reported to Oracle is from February 2005. That's a long time to patch a bug."

– ROBERT McMILLAN, IDG NEWS SERVICE

WINDOWS® LINUX®



Fujitsu PRIMEQUEST™ Servers with Intel® Itanium® 2 Processors.

Mainframe Reliability. Sized for the Mainstream.

For decades, CIOs have trusted Fujitsu mainframes to run their mission-critical applications. Now you can get the same robust engineering and innovative design with the highly reliable, high performance Fujitsu PRIMEQUEST servers featuring Intel® Itanium® 2 Processors. Designed for Microsoft® Windows® and Linux® environments to run mission-critical applications, PRIMEQUEST servers harness the power and performance of up to 32 Intel® Itanium® 2 Processors, to easily accommodate your largest applications. They are designed with integrated networking and management features for simplicity, and offer flexible I/O and partitioning that enhances your agility to respond to dynamic business requirements.

System Mirror

PRIMEQUEST servers offer the ability to run memory and crossbars as mirrored pairs. This option, enabled via the Dual Synchronous Architecture in PRIMEQUEST servers, provides fault immunity for the hosted operating system and applications. The use of System Mirror transparently guards against hardware errors that could otherwise cause a system panic.

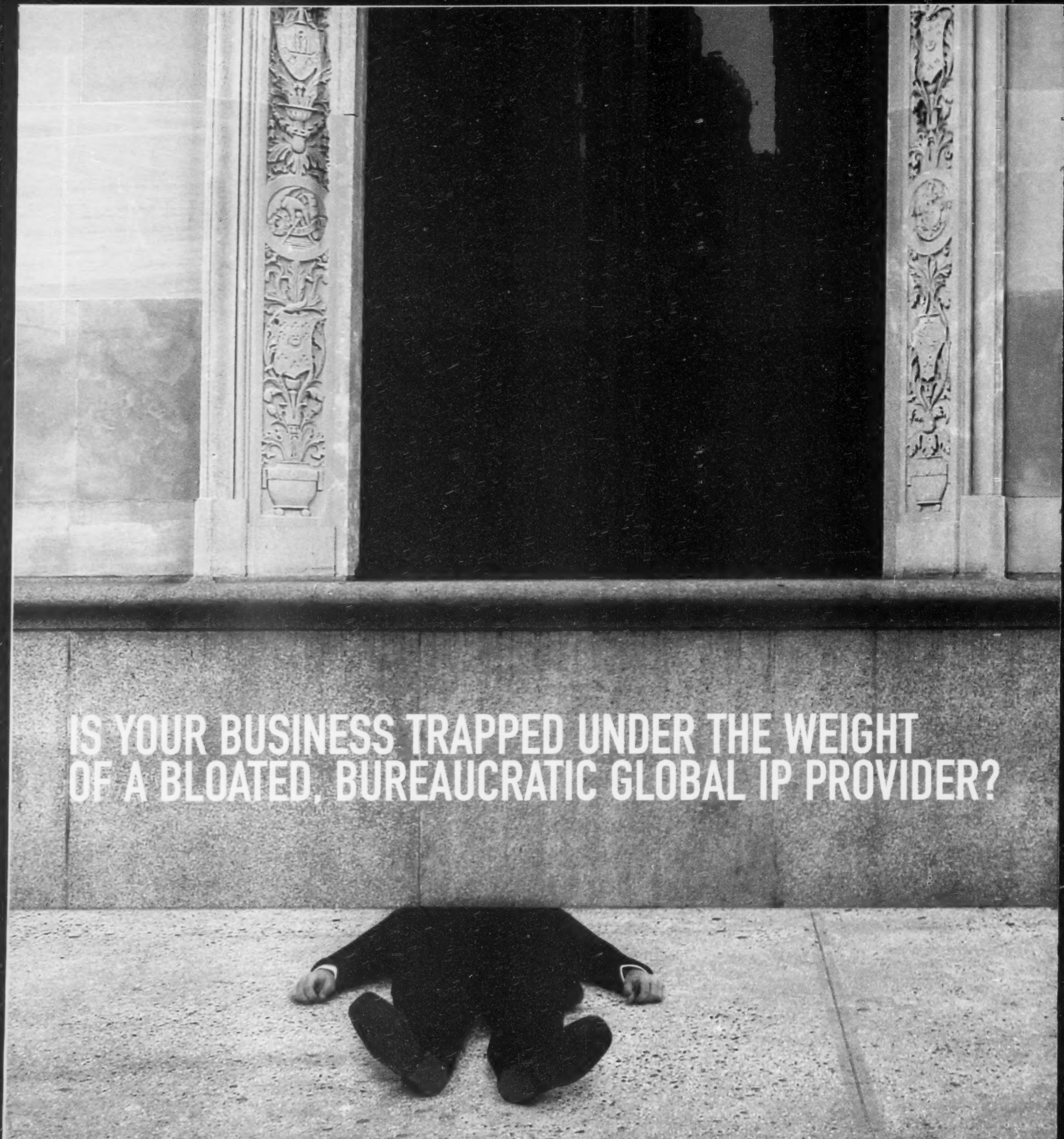
To learn more about how Fujitsu PRIMEQUEST servers bring mainframe reliability to mainstream environments, visit **us.fujitsu.com/computers/PRIMEQUEST** or call **1-800-831-3183**.

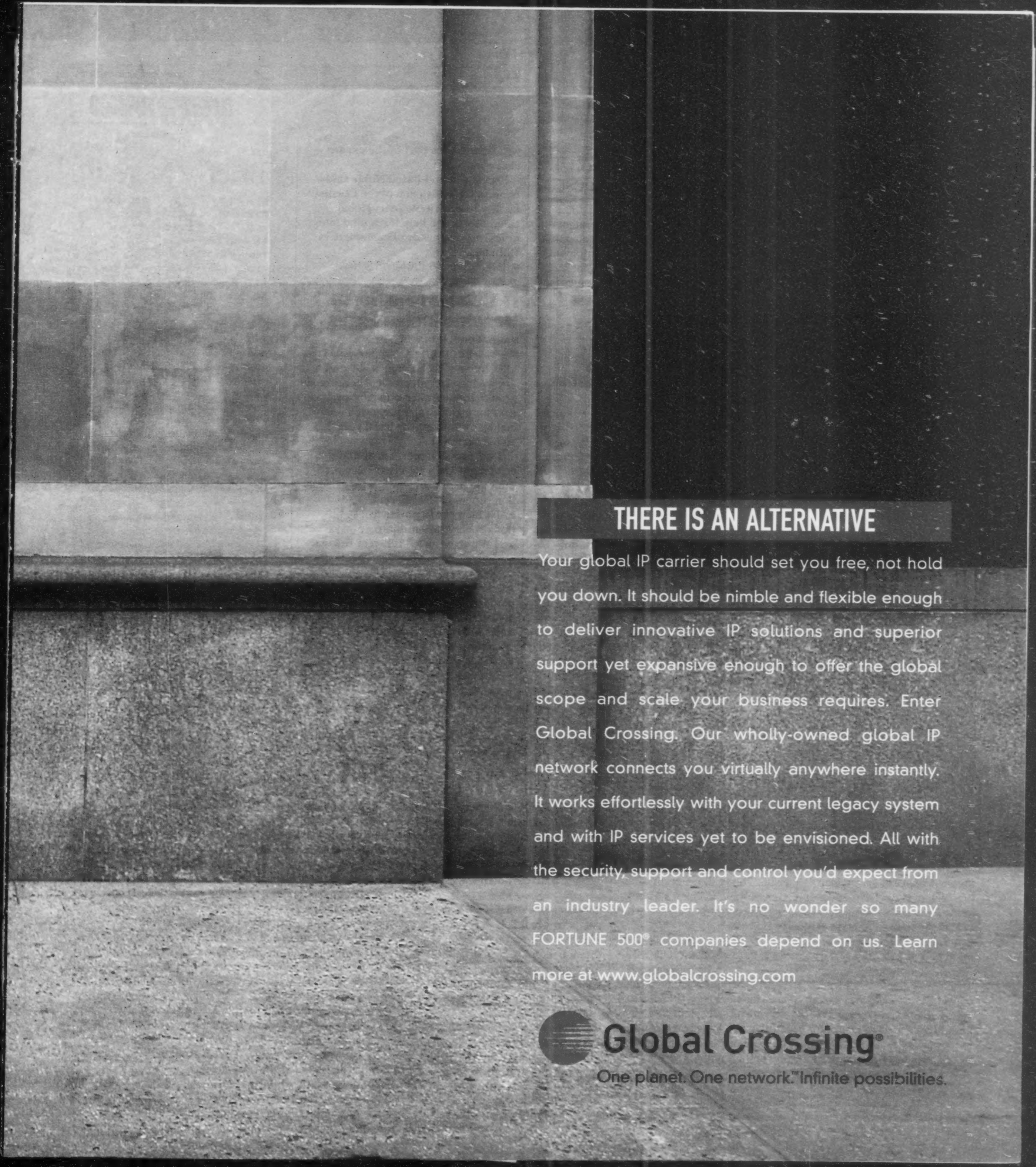
FUJITSU

THE POSSIBILITIES ARE INFINITE

intel Itanium 2 inside™

© 2006 Fujitsu Computer Systems Corporation. All rights reserved. Fujitsu, the Fujitsu logo and PRIMEQUEST are trademarks or registered trademarks of Fujitsu Limited in the United States and other countries. Intel, Intel Inside, Itanium, Itanium Inside, the Intel logo and the Intel Inside logo are trademarks or registered trademarks of Intel Corporation or its susidiaries in the United States and other countries.. Microsoft and Windows are registered trademarks or trademarks of Microsoft Corp. in the United States and/or other countries. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries. All other trademarks mentioned herein are the property of their respective owners.


IS YOUR BUSINESS TRAPPED UNDER THE WEIGHT
OF A BLOATED, BUREAUCRATIC GLOBAL IP PROVIDER?



THERE IS AN ALTERNATIVE

Your global IP carrier should set you free, not hold you down. It should be nimble and flexible enough to deliver innovative IP solutions and superior support yet expansive enough to offer the global scope and scale your business requires. Enter Global Crossing. Our wholly-owned global IP network connects you virtually anywhere instantly. It works effortlessly with your current legacy system and with IP services yet to be envisioned. All with the security, support and control you'd expect from an industry leader. It's no wonder so many FORTUNE 500® companies depend on us. Learn more at www.globalcrossing.com

Global Crossing®

One planet. One network.™ Infinite possibilities.

GLOBAL DISPATCHES An International IT News Digest

Cisco Plans to Expand Saudi Arabian Presence

RIYADH, SAUDI ARABIA

CISCO SYSTEMS INC. last week disclosed plans to spend $265 million (U.S.) over the next five years in Saudi Arabia. The plan includes adding about 530 employees, opening a technology and entrepreneurial demonstration center, and donating networking equipment and training services for use in poor areas of the country.

Cisco President and CEO John Chambers, who announced the investment plans during a visit to Saudi Arabia, said that the networking vendor is increasing its operations there because of the country's increasing role in the global economy.

Chambers said Cisco plans to increase its Saudi workforce from about 70 people to 600 and set up 100 additional networking training centers, where its personnel will work with local universities to provide technical programs. The company currently has 42 training centers in Saudi Arabia.

Cisco also plans to provide incubation space for Saudi start-up companies and R&D operations, plus equipment, training and support services for Internet connections to 2,000 homes in underprivileged areas, according to Chambers.

■ GRANT GROSS, IDG NEWS SERVICE

Nokia Expands Mobile Research Lab in China

SICHUAN, CHINA

NOKIA CORP. last week announced that it is expanding an R&D center in Chengdu, China, so the facility can work on a wider range of mobile network infrastructure products.

Nokia opened the center in Chengdu, the capital of Sichuan province, a year ago to develop IP-based multimedia communications applications. That work will be increased, and capabilities for developing products such as carrier-grade middleware, intelligent packet subsystems and network gateways that support the Wireless Application Protocol will be added as part of the expansion plan.

Espoo, Finland-based Nokia said it expects the expansion of the Chengdu facility to contribute to its global sales efforts and help it respond more quickly to the needs of customers in China.

■ NANCY GOHRING, IDG NEWS SERVICE

GLOBAL FACT

771.1M

Number of cellular connections in the Asia-Pacific region (including Japan) in last year's third quarter, up 5% from the Q2 level.

SOURCE: GARTNER INC.

IT Outsourcing Boom Benefits Indian Firms

BANGALORE, INDIA

TATA CONSULTANCY Services Ltd., Infosys Technologies Ltd. and Wipro Ltd. all credited continued growth in the Indian outsourcing business for significantly improved financial results during the fiscal year that ended March 31.

Tata, India's largest outsourcing vendor, posted a 36% year-over-year increase in annual revenue to 132.5 billion rupees ($2.94 billion U.S.) and a 41% increase in profits to 29.6 billion rupees ($659 million). Infosys and Wipro reported full-year revenue growth of 35% and 30%, respectively.

The New Delhi-based National Association of Software and Service Companies is estimating that India's total software and services exports grew 32% to 1.1 trillion rupees ($23.4 billion) over the past 12 months. ▸

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Hewlett-Packard Co. has opened an intellectual property licensing center in Singapore in an effort to generate additional revenue by licensing its patents and technologies to companies in India and northern Asia as well as Singapore, HP said.

■ STEVEN SCHWANKERT, IDG NEWS SERVICE

Amdocs Ltd., a maker of billing software and other applications for telecommunications carriers, last week said it will buy Qpass Inc. in Seattle for $275 million. Qpass develops software designed to help network operators manage and deliver digital content. Amdocs is based in the British Channel Islands town of St. Peter Port and has its principal operations in Israel.

■ JEREMY KIRK, IDG NEWS SERVICE

Taiwan residents who fail to recycle mobile phones or optical discs, including CDs and DVDs, face fines of up to $6,000 New Taiwan dollars ($184 U.S.) under a law that went into effect last week. An official at Taiwan's Environmental Protection Administration said the idea to fine violators was hatched after a trial run of residential recycling in three major cities.

■ DAN NYSTEDT, IDG NEWS SERVICE

IT Union Head Opposes H-1B Increase, Seeks Aid for Workers Hit by Offshoring

BY PATRICK THIBODEAU

Labor unions don't have much of a presence in the high-tech industry. **Marcus Courtney**, *president of the Seattle-based Washington Alliance of Technology Workers, or WashTech, said that hurts white-collar IT workers in the U.S., who are losing jobs to offshore outsourcing. In an interview with* Computerworld, *Courtney talked about issues affecting IT employees, including outsourcing and the ongoing debate in Congress over immigration and the H-1B visa cap.*

Do you think that Congress will increase the number of visas available to foreigners under the H-1B program? If an immigration reform [bill] is to pass Congress, my expectation is they will most likely have some kind of provision in that bill to expand the H-1B visa cap. That is not the bill to be addressing the issue. The H-1B program is not about immigration; it's a guest-worker program.

Why are you opposed to increasing the H-1B cap on visas? The H-1B visa is a specialty visa designed to fill spot market labor shortages for employers [looking for] very niche skills in the computer industry. When you look at the demand for high-tech workers in the country, there are more workers seeking jobs than jobs available. The [current cap of] 65,000 should be adequate to fill spot labor shortages.

What will happen to displaced technology workers if the cap is raised? It increases the competition [among] those workers for any jobs that are available in the market. It drives down wages.

How much of a threat is offshore outsourcing to U.S. technology workers? The real threat to employment security is the companies that are relentlessly trying to increase their profits and boost their bottom lines at the expense of American jobs. Our frustration is that employers never have to show any evidence that they really can't find [U.S.] employees. When you actually look at the employment figures in the industry, it's hard to imagine that there is a serious crisis facing high-tech employers.

What's the state of union activism among high-tech workers today? The level of engagement peaked at the 2004 election. With this [immigration] debate, we're seeing an awakening among tech workers about the value and need of representation.

What do you think can be done to help workers who have lost jobs to offshore outsourcing? One thing we are trying to do is get legislation passed around Trade Adjustment Assistance. This has been a big issue for white-collar workers. If they lose their jobs to offshore outsourcing, the government has said that if they don't make goods or material, they could not get access [to] TAA, which will give them benefits for retraining, health care, re-employment and moving expenses.

Why don't technical workers get the same access to the benefits as manufacturing workers? When [Congress] passed the Trade Adjustment Assistance act, it only believed that manufacturing workers would ever be impacted. Manufacturing workers are more organized. It's not a coincidence that a heavily unionized industry such as manufacturing was able to get government programs for workers. Technology workers are just beginning to get organized. ▸

4th Annual
COMPUTERWORLD

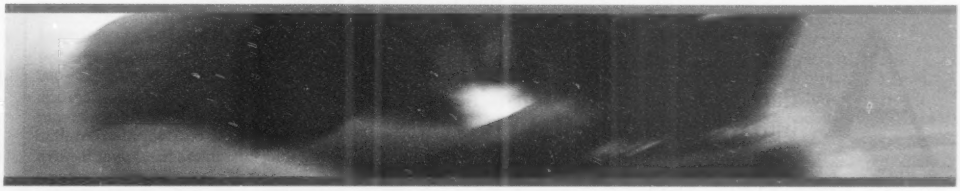
MOBILE & WIRELESS WORLD

May 22-24, 2006
The Ritz-Carlton
Grande Lakes
Orlando, Florida

UNDERWRITTEN BY

intel

Connect Proven Mobile & Wireless Solutions to your Enterprise Strategy



Featured speakers include:

JOHN JOHNSON
VP, Finance and Enterprise Services, CIO, Intel Corporation

GAY MADDEN
VP of Management of Information Systems,
The Hospice of the Florida Suncoast

CURT SMITH
Director of Applications, Chief Technology Office, BP

JOHN WADE
VP/CIO, Saint Luke's Health System

ALINE WARD
CIO, Southern Company Transmission,
Distribution and Mississippi Power Region

THOMAS WERNER
AVP, Technology, Norfolk Southern Corporation

PATRICK WISE
VP, Advanced Technology, Landstar Systems

DENISE YUNKUN
Managing Director, FedEx Solutions Sales Technology,
FedEx Services

The Leading Conference for:

- IT Management
- Mobile/Wireless Technology Architects and Implementers
- Mobile-intensive Application Implementers
- Wireless LAN/Wi-Fi/Network Professionals

Topic Areas Include:

- Top-down Planning for Enterprise Wireless Infrastructures
- Building and Defending the Business Case
- Adapting Desktop Applications to Handhelds
- Using Broadband Wireless ISPs
- RFID
- Cellular Mobile Data and Carrier Management
- WLANs and Security

Gala Evening Entertainment Featuring:

The Second City

Mobile & Wireless World 2006 sponsors include:

sponsors as of 4/20/06

PLATINUM SPONSORS	PARTICIPATING SPONSORS	MEDIA SPONSORS	"BEST PRACTICES IN MOBILE & WIRELESS" AWARDS PROGRAM SPONSORS	OFFICIAL CONFERENCE BRIEFCASE PROVIDER
AVAYA cingular raising the bar hp invent SYBASE	ClairMail CREDANT TECHNOLOGIES Be mobile. Be secure. inmarsat TRAVERSE NETWORKS	Integrated Solutions FOR WIRELESS, MOBILITY & RFID mobile ENTERPRISE ALLIANCE The Wi-Fi Technology Forum COMPUTERWORLD	cingular raising the bar intel	Targus OFFICIAL NEWS RELEASE DISTRIBUTION SERVICE Business Wire

For more information or to register now, visit www.mwwusa.com

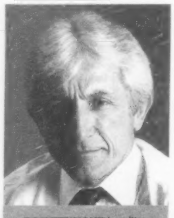
For sponsorship opportunities, call John Amato at 1-508-820-8279

DON TENNANT

Waiting by the Phone

AT FIRST, I thought Larry Ellison was just being a jerk. I assumed that Oracle's flamboyant CEO was elbowing his way into the spotlight again by dropping the kind of bombshell he just loves to drop to draw attention to himself.

It seemed that every news outlet I went to early last week was jumping all over a story in Monday's edition of London's *Financial Times* that was based on an interview with Ellison. "Oracle Chief Opens Door to Buying Novell," trumpeted the headline of a *Boston Globe* article that cited the *Financial Times* story. "Oracle Looks at Buying Novell," a Slashdot headline proclaimed. "Oracle Contemplates Acquiring Novell," Softpedia echoed.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

Having interviewed Ellison myself several times over the years, I didn't find it a bit surprising that he would say something like that just to bask in the buzz it would create. But then I read the original *Financial Times* article, and I realized it wasn't Ellison being Ellison after all. It was we in the media who were the jerks.

Buried way down in the 1,410-word story was a reference to Oracle's widely reported interest in buying JBoss, which was recently acquired by Red Hat. Ellison noted that there would have been a risk in Oracle acquiring JBoss or Red Hat because of the inherent lack of control that open-source companies have over their intellectual property. In that context, the *Financial Times* author wrote, "Oracle looked at buying Novell, owner of SUSE, Europe's biggest Linux company, but would have faced the same risk, [Ellison] adds."

That's it. That's what all the fuss was about. A condensed version of the article by the same author made an equally innocuous reference to Novell: "As part of a recent study of the open-source software market, Mr. Ellison said that Oracle had considered buying Novell, which after Red Hat is the biggest distributor of Linux."

It's mind-boggling that those statements would come as a surprise to anyone. Companies like Oracle consider such acquisitions all the time. I would be absolutely shocked if anyone at Oracle, IBM, Sun, Hewlett-Packard, CA or even Microsoft could honestly and knowledgeably say that their company *hadn't* considered an acquisition of Novell.

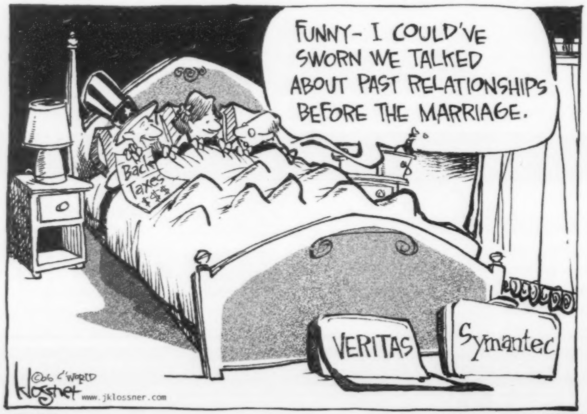
Even more mind-boggling is how so many news outlets managed to extrapolate from those comments that Oracle is actively considering a Novell buyout. (*Computerworld.com* on Monday posted a Reuters story that made it clear it was in the past that Ellison had looked at acquiring Novell.) And once the buzz started, there was no stopping it. That turned out to be a very good thing for Novell, which saw its stock rise 2.3% on Monday.

The fact is, *somebody* needs to acquire Novell. As it stands, Novell is losing customers hand over fist to Microsoft. It's been largely unsuccessful in capitalizing on the brilliant NetWare-to-Linux migration strategy it adopted three years ago. And it remains wholly incapable of getting its perennially pathetic marketing act together.

Under the tired leadership of 65-year-old CEO Jack Messman, Novell doesn't appear to be doing much more than sitting around, waiting for the phone to ring. I used to wonder why Novell's board hasn't given Messman a gold watch and a handshake, until I realized that the average age of the 10 board members is 64.5. I guess 70-year-old board member James D. Robinson III sees Messman as downright dynamic.

At least Ellison, at 62, leads his company with vitality and exuberance. That sort of thing will eventually echo through the halls of Novell. But it'll be coming from the other end of the phone. ▸

Don Tennant


FUNNY- I COULD'VE SWORN WE TALKED ABOUT PAST RELATIONSHIPS BEFORE THE MARRIAGE.
Back Taxes $$$
VERITAS
Symantec
©06 C'WORLD
Klossner
www.jklossner.com

VIRGINIA ROBBINS

Maximizing A Retention Bonus

THE BACK of my new boss's black leather chair faced me as I bounded into his office; a crown of brown hair was all that was visible. My old boss had retired a month earlier, wanting no part of the project to outsource our IT department.

I was young (this was almost two decades ago) and eager to make a positive impression on my new supervisor. I had the project costs that he had requested, and I had worked through lunch to make sure that the report represented my best work. As I approached his desk, I thought I heard snoring. I cleared my throat and his head bobbled. He was asleep. My new boss, friend and golfing partner of the chairman, would spend many an afternoon comfortably napping while I wrote his memos, completed his budgets and prepared his board reports. Forty-eight hours after cashing my retention bonus, I quit.

VIRGINIA ROBBINS is a former CIO and is now chief operations officer at North Bay Bancorp in Napa, Calif. Contact her at **vrobbins@sbcglobal.net**.

This week, a former employee called to ask how she could maximize her retention bonus. She had accepted another job, but her boss didn't want her to go, even though she had completed her work. She was frustrated and angry. Earning one's bonus in these situations takes a lot of patience.

IT veteran Sam Greene wrote me recently about ways to retain your sanity and maximize your paycheck when the department is being decimated around you — good advice for these situations. To paraphrase Sam:

1. Never be confrontational with management. Your supervisor has discretion as to who stays, who goes and who gets paid what. Don't give him a reason to fire you before you get paid.

2. Identify manipulation and then carefully choose how to respond to it. When you're in a sea of dysfunction, you can decide when and where you'll go swimming. Stay in the boat, out of the water, whenever you can.

3. Work carefully to stay off the boss's radar. Keep your head down and get your job done. I usually recommend doing your best work, but in these cases, doing merely good work — no more than what's requested — can result in higher severance bonuses. Doing your job too well may result in a job offer without any severance or bonus payments.

4. Keep a professional distance from those who are not handling the stress well. During periods of high stress, sometimes people try to manage by swapping "Can you believe" stories that focus on how bad everyone and everything is. Listen if you have to, but don't contribute.

5. Understand what you can influence, and learn to identify and accept what you can't control. I know — it's easier said than done.

6. Keep your résumé updated and always network for possible job opportunities.

7. Find a trusted mentor outside the company. To keep your emotional balance, find someone you trust who will provide you with an honest assessment of your situation and your behavior.

8. Continue to be honest and open with your employees. This will help you understand what's going on and may help you plan for future disruptions as these employees leave.

9. Finally, understand the difference between thriving and surviving. Surviving requires a different approach, one that is quieter and more self-absorbed than I usually advocate. However, in a dysfunctional situation, your most important job is to take care of yourself, stay centered and be prepared for the next opportunity. ▸

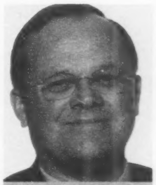
……

BRUCE A. STEWART

Innovation And What's 'Normal'

AN INCREASING number of companies are being commanded to be innovative by CEOs. Not surprisingly, being commanded to be innovative isn't working very well. CIOs, in turn, are being asked to simultaneously rationalize more of the company's processes and be innovative. Again, not surprisingly, only one of these is going well: the process rationalization.

Let's face a few facts. Almost all of the work of an IT organization is highly structured, disciplined and driven by well-controlled processes. IT organizations are put together around control points such as project offices. We measure performance and manage with the goal of improving that performance, and we are slowly but surely architecting a well-designed, comprehensive systems base. This is what we in IT do, and do well.



BRUCE A. STEWART is a former CEO and onetime senior vice president and director of executive services at Meta Group Inc. He is now an executive adviser in Vancouver, British Columbia. He can be contacted at **bruce@bastewart.com**.

And none of it leads readily to innovation.

Charles Handy, a British management theorist, has talked about four kinds of organizational units. There's the unit that's built around networking to get deals done — lots of quick conversations, calls and e-mails. There's the unit that's built around processes — that's all about controls. There's the unit that's built around projects. Finally, there's the unit that's built around individual contributors, each of whom is valued for his unique skills.

Handy went on to say that this model extends down to individuals and up even to national cultures. In other words, each of us has a personal style. It's typically composed of a dominant and a secondary style — in other words, we can flex and "fit in" to some extent. But we're most at home in our dominant style, and we're most likely to stay in an organization whose style matches our dominant one. (Fifty years of separation between the infrastructure staff and the development staff actually has its roots in this matter of self-selection by style.)

For innovation, you need the individual contributors and the networkers. Ideally, you'd have a group of people, some of whom are dominantly individual contributors and secondarily networkers, and the rest of whom are the reverse. But IT organizations are built on the building blocks of processes and projects. No wonder innovation is difficult, if the very people you need aren't around and the values of the organization are stacked against them being there.

Can we innovate with what we've got? Up to a point, the answer is yes. But we have to look past departments to do it, and look at individuals. We could draw upon an individual contributor/project person (likely an architect), a networker/project or networker/process person (likely a business analyst or relationship manager), and maybe even an individual contributor/process person (likely the hero who keeps the place together at 3:00 in the morning).

We also have to recognize some other truths. Innovation isn't a project — it's a process. We have to network extensively with potential innovators — multiple leaders will emerge — to try to assess their performance and direct their efforts. We have to look at the track record of those innovators over time, since many of their innovations will go nowhere or be abandoned. Thinking like a venture capitalist — looking for the one win in 10 — is a good approach here.

Finally, we have to protect the innovators: They will make enemies throughout the rest of the IT organization, regardless of their successes or failures. After all, innovators just don't "fit in" with the rest of us. That's why they're so hard to find. ▸

WANT OUR OPINION?
More columnists and links to archives of previous columns are on our Web site:
www.computerworld.com/columns

READERS' LETTERS

Looking for Soft Skills in MBA Programs

MANY PEOPLE focus on the technical aspects and course content of MBA programs, but I rarely hear communication mentioned ["What's an MBA Good for – Really?" March 6]. One of the key benefits of a good MBA program is the interaction of people from many backgrounds, all learning to communicate with one another.

The inability to communicate with someone outside of your specialty is rampant. When I went through my MBA program, I was a typical engineer who thought very linearly and expressed myself in terms that other engineers could understand.

I was paired with a philosophy major. Imagine his angst trying to listen to me. And I could barely understand anything he said. It took weeks of arguing and frustration before we began to understand each other. But when it was over, we had developed the tolerance, patience and language skills needed to produce a product far superior to what either of us could have done alone. We gained an appreciation for what each of us could bring to the table. Those are lessons that transcend the actual course content.

I hope every student uses available opportunities to develop the skills that are most important in the long run. If the goal is a high-level position, the ability to work with many diverse styles and skills will help immensely.

George Ludden
Network manager,
Richmond, Va.

……

MY UNDERGRADUATE degree is in science. Yearning for a better understanding of the business side, I entered a full-time MBA program in 2004. I was sorely disappointed at what was being taught, particularly in the human resources management class. With an emphasis on how to keep your company from being sued and meaningless statistics, the class glossed over how to identify different personality traits or, better yet, how to effectively communicate or motivate people with different personalities.

Although I am grateful I learned as much about business in general as I did, I am disappointed that more emphasis was not placed on how to manage people. This is one reason why I think there are so many horrible managers. Hopefully, more criticism and articles like Paul Glen's will change the programs across the nation.

Sheri Véronneau
Oklahoma City

……

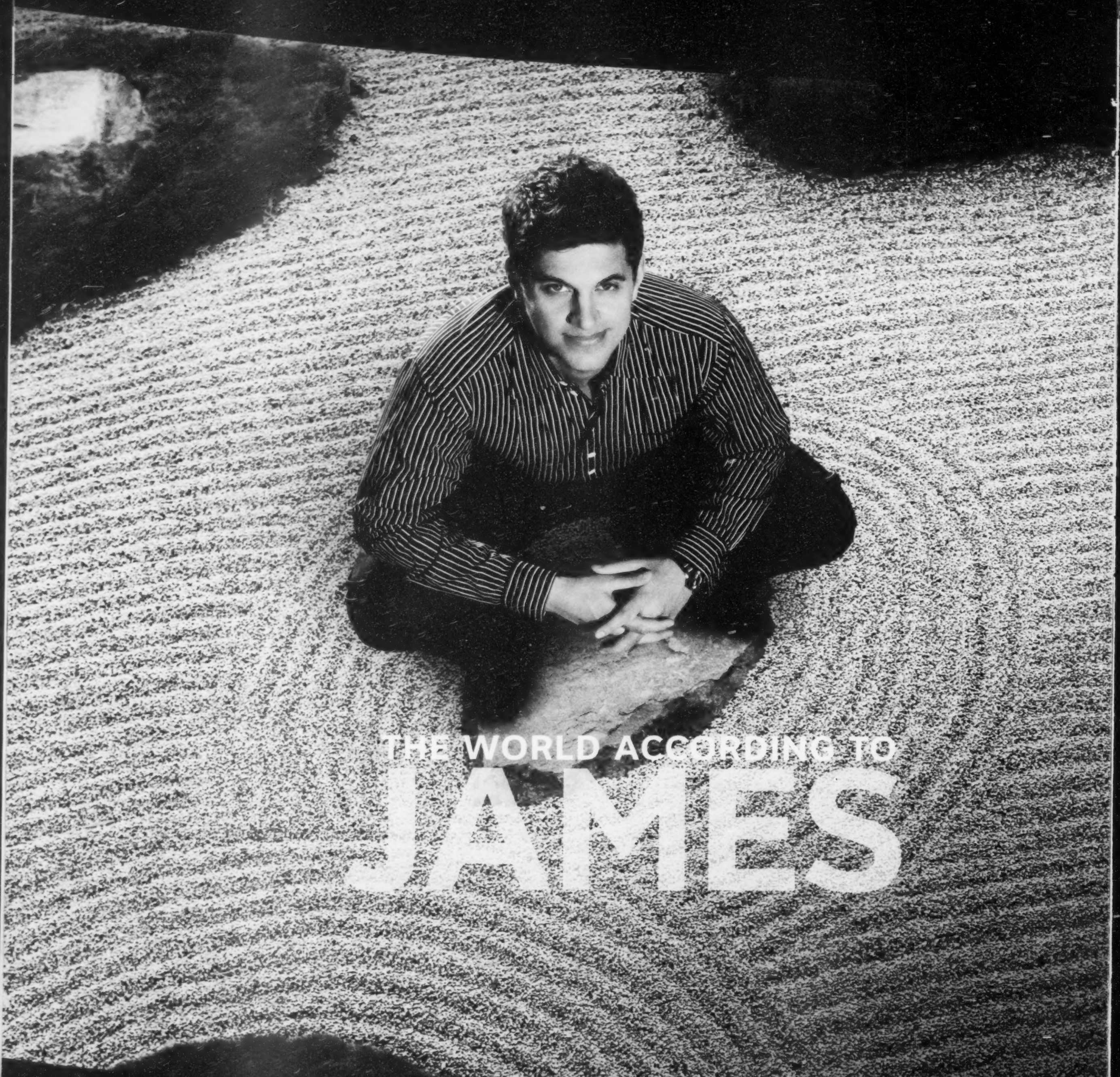
U.S. Shouldn't Be The World's Censor

DON TENNANT really hit the nail on the head in his editorial "The Censorship Call" [Feb. 27]. It is not America's place to tell other governments what level of censorship should exist. Europeans think we Americans are very prudish in our attitude toward nudity on television and in newspapers. Each country has the right to set its own standards.

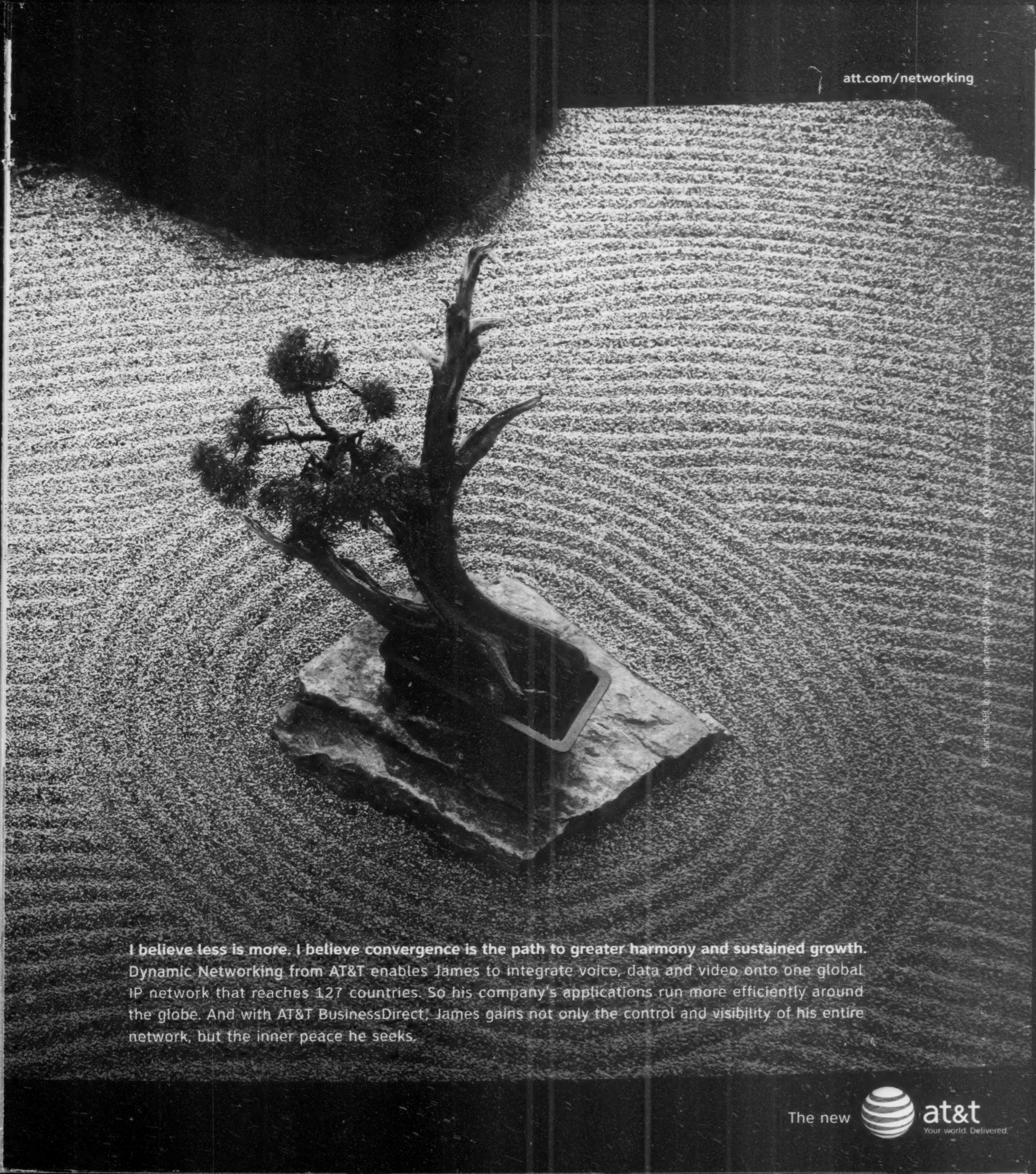
Mike Mullane
Consulting manager,
Hartford, Conn.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

For more letters on these and other topics, go to
www.computerworld.com/letters



THE WORLD ACCORDING TO
JAMES



att.com/networking

I believe less is more. I believe convergence is the path to greater harmony and sustained growth. Dynamic Networking from AT&T enables James to integrate voice, data and video onto one global IP network that reaches 127 countries. So his company's applications run more efficiently around the globe. And with AT&T BusinessDirect®, James gains not only the control and visibility of his entire network, but the inner peace he seeks.

The new at&t
Your world. Delivered.

How paper from Oberkirch reaches the four corners of the globe. Without interruption.

The Koehler Group in Oberkirch, Germany is one of the world's largest makers of specialty paper, used to make everything from airline tickets to Pokémon cards. Managing their output takes continuous 24/7 production—and HP Integrity servers with Intel Itanium 2 processors. "We produce and ship over 1,500 tons of paper each day. A moment of downtime means production must stop," says Bruno O. Schwelling, CFO. "Itanium-based HP Integrity systems have virtually eliminated that fear." itanium-integrity.com

ITANIUM + INTEGRITY. ON AND ON AND ON.

TECHNOLOGY

04.24.06

SECURITY MANAGER'S JOURNAL

These Rules Will Keep Users in Their Place

Mathias Thurman is counting on the rule of least privilege and separation of duties to keep users out of places in the network where they don't belong. **PAGE 36**

QUICKSTUDY

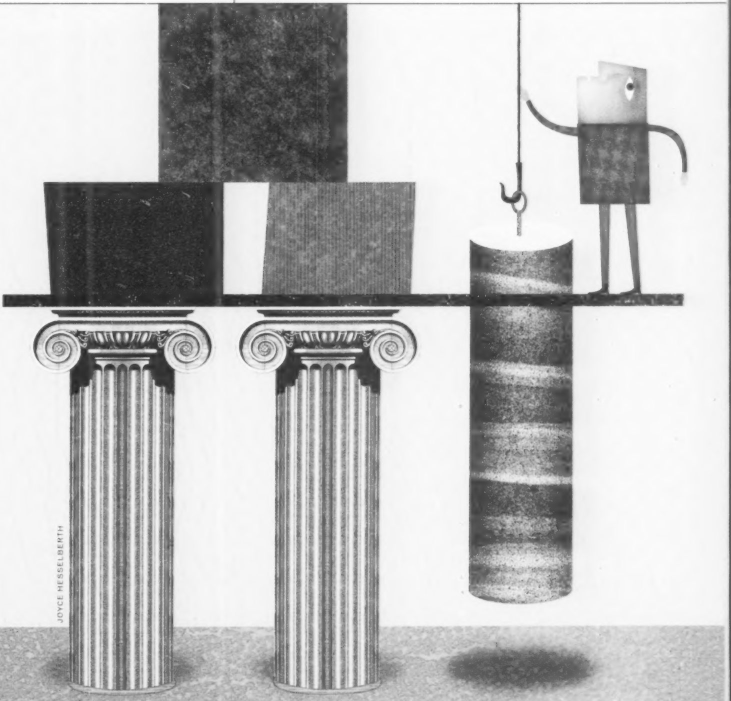
Virtual Machines

Each of these self-contained operating environments behaves as if it were a separate computer. This makes it possible to use computing resources more efficiently and isolate applications to improve security and prevent cross-corruption. **PAGE 38**

OPINION

Factory Settings – Insecure by Default

Douglas Schweitzer says the default security settings on wireless routers provided by telecommunications vendors may be insufficient. **PAGE 39**



JOYCE HESSELBERTH

Rebuilding the Legacy

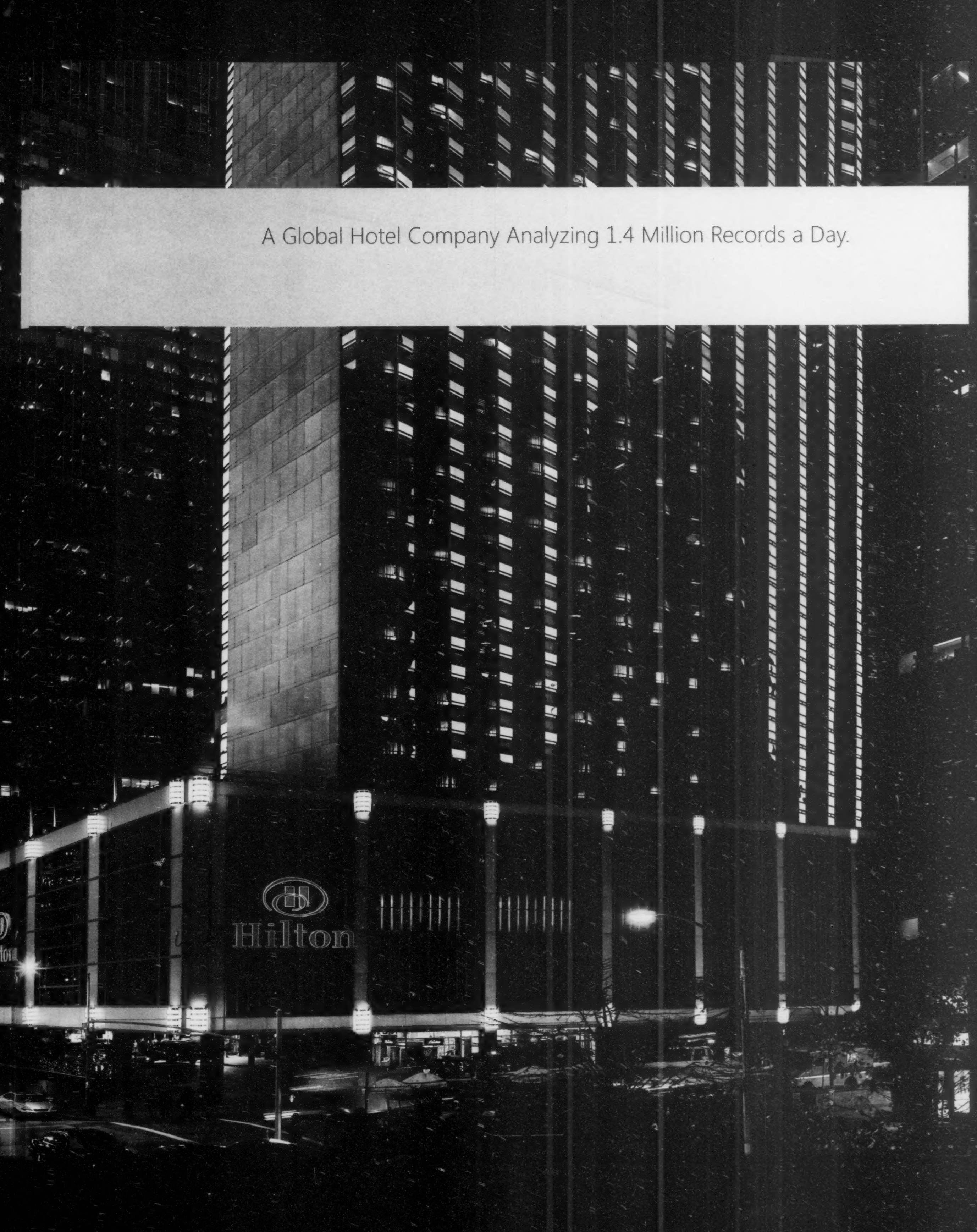
Millions of lines of mainframe code need to be modernized. How to do that — and what to keep on the mainframe — is the trillion-dollar question.

By Robert L. Mitchell

BY SOME estimates, the total value of the applications residing on mainframes today exceeds $1 trillion. Most of that code was written over the past 40 years in Cobol, with some assembler, PL/1 and 4GL thrown into the mix. Unfortunately, those programs don't play well with today's distributed systems, and the amount of legacy code at companies such as Sabre Holdings Corp. in Southlake, Texas, makes a

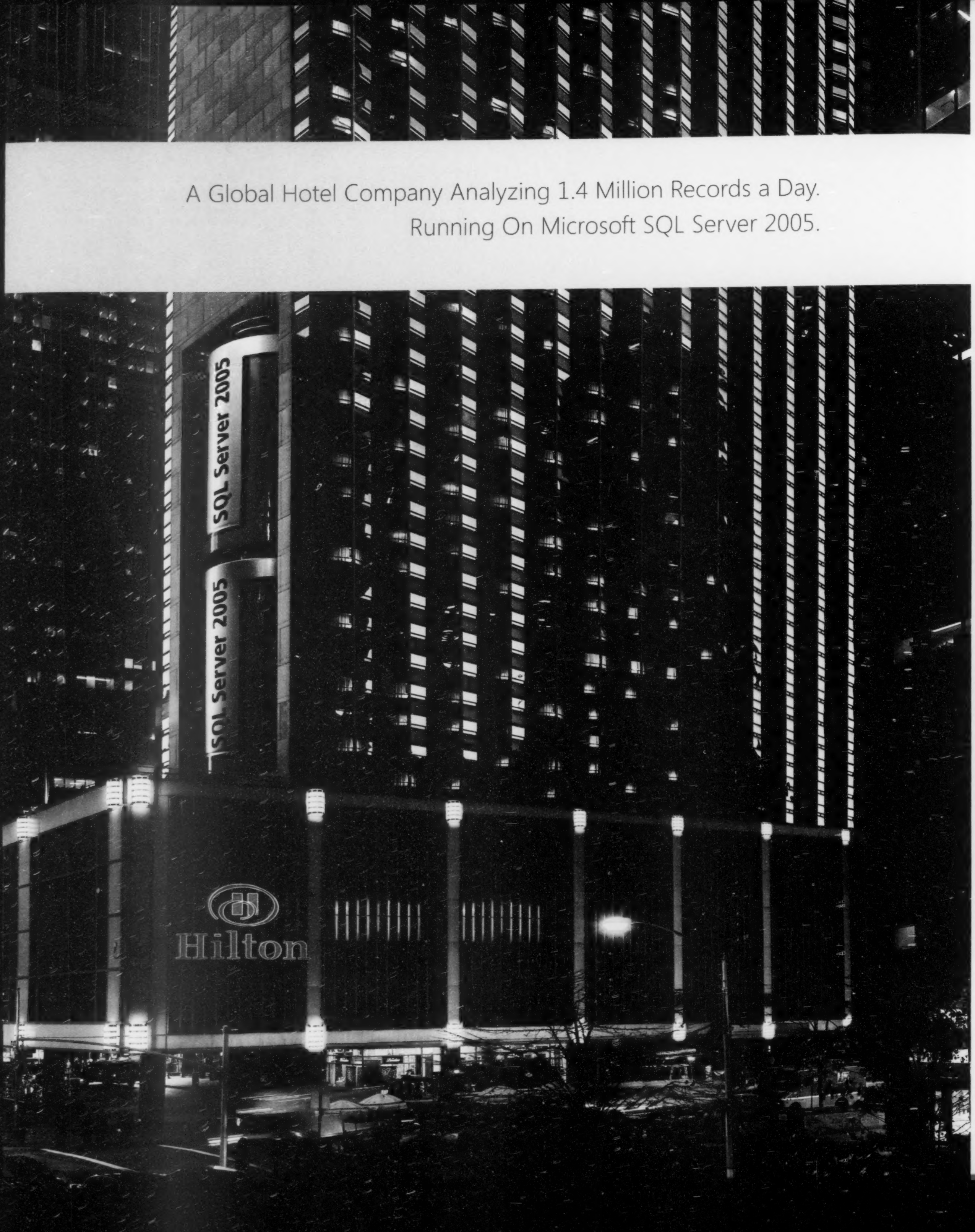
Continued on page 32

Your potential. Our passion.
Microsoft
Hilton



A Global Hotel Company Analyzing 1.4 Million Records a Day.

A Global Hotel Company Analyzing 1.4 Million Records a Day.
Running On Microsoft SQL Server 2005.


SQL Server 2005
SQL Server 2005
Hilton

How does Hilton forecast demand for its 370,000 rooms and its catering services? They import data from six systems into one data warehouse requiring 7 million rows, and running on SQL Server™ 2005 with 99.98% uptime.* See how at **microsoft.com/bigdata**

Microsoft
SQL Server 2005

*Results not typical, and are based on use with Windows Server™ 2003 Enterprise Edition. Availability is dependent on many factors, including hardware and software technologies, mission-critical operational processes, and professional services. © 2006 Microsoft Corporation. All rights reserved. Microsoft, Windows Server, and "Your potential. Our passion." are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

Continued from page 27

rewrite a huge undertaking.

"We're bound by our software and its lack of portability," Sabre Vice President Alan Walker says of the 40,000 programs still running on IBM Transaction Processing Facility (TPF), Agilent Modular Power System and other mainframe systems.

With a shortage of Cobol programming talent looming in the next decade (see story at right) and a clear need for greater software agility and lower operating costs, IT organizations have begun to make transition plans for mainframe applications. The trick lies in figuring out which applications to modernize, how to do it and where they should reside.

Applications fall into one of three groups based on scale, says Dale Vecchio, an analyst at Gartner Inc. Applications under 500 MIPS are migrating to distributed systems. "These guys, they want off," Vecchio says. As organizations begin peeling away smaller applications, they may move to a packaged application; port the application to Unix, Linux or Windows; or, in some cases, rewrite the applications to run in a .Net or Java environment, he says.

In the 1,000-MIPS-and-up arena, the mainframe is still the preferred platform. Applications between 500 and 1,000 MIPS fall into a gray area where the best alternative is less clear. An increasingly common strategy for these applications is to leave the Cobol in place while using a service-oriented architecture (SOA) to expose key interfaces that insulate developers from the code.

"If you expose those applications as a Web service, it's irrelevant what that application was written in," says Ian Archbell, vice president of product management at tool vendor Micro Focus International PLC in Rockville, Md. "SOA is just a set of interfaces, an abstraction."

"SOA at least allows you to break the dependency bonds," says Ron Schmelzer, an analyst at ZapThink LLC in Waltham, Mass.

Cobol isn't going away, but it's also not moving forward. While the Cobol code base on mainframes is projected to increase by 3% to 5% a year, that's mostly a byproduct of maintenance, says Gary Barnett, an analyst at Ovum Ltd. in London. "No one is learning [Cobol] in school anymore, and new applications aren't being built in Cobol anymore," says Schmelzer. "Cobol is like Latin."

Vendors such as Micro Focus have abandoned the idea of evolving the Cobol language for distributed application development. "Micro Focus is not about a better Cobol compiler," says Archbell. Instead, its approach is to "embrace and extend," he says. "We expose things like aggregated CICS transactions as JavaBeans, Web services, or .Net or C# code. It's wrappering."

But with so much legacy code, that process won't take place overnight. "It could take 20 years," Archbell says.

Sabre still has more than 10,000 MIPS of applications on mainframes, and Walker plans to migrate everything off over the next few years. The company's TPF-based fare-searching application, used by Travelocity.com LP and travel agents, has been rewritten to run as a 64-bit Linux program on four-way Opteron servers.

Sabre migrated the back-end data to 45 servers running MySQL that each contain fully replicated data. The new system is more flexible and "pretty cheap" compared with the mainframe, Walker says. He questions the conventional wisdom that all high-end applications need to stay on mainframes, noting that the search application was in the thousands of MIPS. "It's pretty obvious that you don't need mainframes to do large-scale transactions," he says, pointing to the successes of eBay Inc. and Amazon.com Inc.

Barnett points out that very few of his clients have been successful at completely rewriting large-scale applications.

In Sabre's case, it's worth noting that the application was CPU- and memory-intensive and that competitive pressures would have forced a rewrite anyway. "We solved a larger problem," which was the need to generate hundreds of results instead of the 10 to 20 the TPF system could deliver per search, Walker says.

Simply rewriting millions of lines of code to deliver the same features not only wouldn't cut it financially at The Bank of New York Co., but also would require a lifetime of work, says Edward Mulligan, executive vice president of the technology services division.

A gradual transition to packaged applications might help such businesses, says Ovum's Barnett. "Eighty percent of core business processes in banks are the same. In 10 years, it will make little sense to have your own, unique homegrown savings program," he says.

Mulligan has been migrating some smaller applications, freeing up expensive mainframe capacity. The big reason: cost. When the vendor of his problem management software refused to bring licensing in line with equivalent packages in the Windows arena, he migrated to a cheaper Windows version. The total operating costs of running applications on the mainframe can be "easily" 10 times that of a Unix or Windows architecture, says Sabre's Walker.

While IBM has begun offering subcapacity, usage-based pricing, few third-party vendors of mainframe software have followed suit. "Vendors who

The Cobol Brain Drain

Colleges aren't cranking out Cobol programmers anymore, and skills availability is one of the top three concerns in mainframe shops, says Dale Vecchio, an analyst at Gartner.

Some organizations say they are already having trouble hiring Cobol programmers. "It's difficult to find people to support it," says Bob DiAngelo, vice president and CIO at MIB Group. That's one reason why his company is migrating to a new application architecture built around Java and WebSphere.

Meanwhile, the ranks of experienced programmers are also thinning. "Many Cobol developers are entering retirement now . . . so it's challenging around staffing," says Edward Mulligan, executive vice president of the technology services division at The Bank of New York.

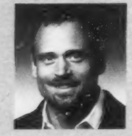
But Gary Barnett, an analyst at Ovum, says IT needn't panic. "There is no skills crisis," he argues. While there is a shortage of highly trained mainframe programmers, many existing Cobol applications are very stable and don't require much maintenance. Plus, tools are evolving to allow a single developer to maintain more of the code than was possible just a few years ago. Ovum predicts that the amount of Cobol code in use will grow 3% to 5% annually through 2010, but that mostly involves maintenance work, Barnett says. Most new projects are moving to more modern application architectures.

Organizations that can't find local talent can also outsource. "India provides a very elastic supply of Cobol developers," Barnett says, and others can be cross-trained. "Once you have a proficient programmer, training them on Cobol is not an arduous process."

It's true that the ranks of legacy programmers are declining, but, says Barnett, "I don't see it as a major concern for the foreseeable future."

– ROBERT L. MITCHELL

> I remember someone telling me we shouldn't get rid of the mainframe, it's five 9s and you're going to be running this Windows junk. The reality is that [our distributed systems] are up all of the time, and our actual [mean time between failures] is tremendous.



CHRISTIAN ANSCHUETZ, CIO, PUBLICIS GROUP SA

> It's really just a big server. You can run anything on it.

BOB DiANGELO, VICE PRESIDENT AND CIO, MIB GROUP INC.

don't embrace flexible pricing are accelerating the decline in their business," says Barnett.

At Sabre, Walker plans to continue to migrate off the mainframe, which he says is simply too expensive.

In-Place Upgrade

Bob DiAngelo, vice president and CIO at MIB Group Inc., is already facing that challenge. His company relies on an I/O-intensive application used to detect insurance fraud for more than 500 insurers in North America. DiAngelo says it was impossible to hire anyone to support MIB Group's IBM mainframe applications, originally written in 1969 in assembler with a back-end VSAM database.

So a few years ago, he received approval to re-engineer the system. The IT team is developing the new system in Java based on a three-tiered architecture using WebSphere MQSeries and DB2. But the new system, now halfway complete, doesn't run on Unix or Windows hardware. It, along with the systems still in production and the development and quality assurance testing environments, all run within a single logical partition on a 210 MIPS uniprocessor IBM zSeries 880 with a z/OS Application Assist Processor (zAAP) that handles the Java workload.

Growth Inhibitors

Data center managers cited software costs as the largest inhibitor to increasing their use of mainframes.

Hardware costs	1%
IBM software costs	15%
Third-party software costs	47%

Base: 100 data center conference attendees

SOURCE: 2005 GARTNER INC. SURVEY

The new Java code runs on a zAAP. Keeping the applications off the mainframe processor keeps CPU-based licensing for third-party applications from rising while boosting the total system capacity to 366 MIPS. But DiAngelo doesn't have a lot of third-party software to worry about. He says declining mainframe operating costs have allowed the company to grow from an 80 MIPS system to the 210 MIPS box plus the zAAP processor while total costs remained "relatively stable."

Walker isn't convinced. "We could run Java code in a z9, but it would make it the world's most expensive Java CPU," he says.

Barnett agrees — partially. "If you have Java or workloads that need high-speed access to mainframe data, running it on a mainframe partition is a viable choice," he says. "But . . . for generic Linux or Java workloads, it still isn't an obvious consolidation platform."

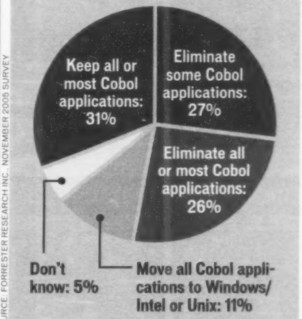
IBM is hoping that others will follow MIB Group's example. "IBM is pushing one box, multiple architectures," says Gartner's Vecchio.

Guru Rao, an IBM fellow and chief engineer for eServer, says consolidating a three-tiered architecture on the mainframe when data resides there makes sense because communications between the front and back end don't have to go over a latency-prone TCP/IP network. On the mainframe, he says, "you can communicate with each of these spaces using instructions as opposed to TCP traffic."

DiAngelo acknowledges that rewriting applications isn't always practical. "Doing a rip-and-replace is a big thing," he says of the five-year project. "There are things you can't afford to re-engineer, and they will probably always sit in the place where they were developed."

Plans for Cobol Apps

Which of the following best describes your company's strategy for its mainframe Cobol applications?



Base: 158 nongovernment IT decision-makers

SOURCE: FORRESTER RESEARCH INC., NOVEMBER 2005 SURVEY

The transition also requires more horsepower for an application that consumes up to 300 I/Os per transaction and up to 130,000 transactions per day. "Java requires more CPU power than assembler, [and] as you move from proprietary VSAM to a generated database system, you lose efficiencies. With WebSphere, MQSeries and DB2, you have to crank the dial up," DiAngelo says.

Another question is whether that strategy will scale for applications beyond a few hundred MIPS in size, says Vecchio. On the high end, IT must move to SOA because there are no other options, he says. "The hope for mainframe customers is that WebSphere and Java can perform with the same quality of service that they have come to expect from CICS, IMS and Cobol," he says.

Publicis Group SA moved entirely off of an MVS mainframe and onto an open system. The advertising agency deployed high-density Hewlett-Packard Co. blade servers and VMware Inc. partitions to increase utilization levels. It migrated the primary application — a financial reporting system that included client billing, ERP and reporting that amounted to 80% of the mainframe workload — to PeopleSoft. Other applications were either ported or retooled entirely, says CIO Christian Anschuetz. "It was a Herculean effort, to be sure," he says of the four-year project.

His main motivation was cost. The mainframe was "extraordinarily expensive" and not agile enough for the organization's needs, Anschuetz says, and "the licensing costs associated with the development tools were just astronomical." Publicis has reduced its operating costs by 10% a year.

Even after considering the management costs of a distributed system and the cost of the Intel servers needed to replace the mainframe, the total cost of ownership was still "dramatically lower," Anschuetz says.

He says he did have concerns about moving off the mainframe. "I remember someone telling me we shouldn't get rid of the mainframe, it's five 9s, and you're going to be running this Windows junk," Anschuetz says. "The reality is that [our distributed systems] are up all of the time, and our actual [mean time between failures] is tremendous."

When it comes to dealing with legacy applications, there are no across-the-board answers, says Robert Rosen, president of Share, a Chicago-based IBM mainframe user group. "Where you get into trouble is when you try to force-fit a solution," he says. "Taking the best of both worlds, that's the key." ▸

> The hope for mainframe customers is that WebSphere and Java can perform with the same quality of service that they have come to expect from CICS, IMS and Cobol.

DALE VECCHIO, ANALYST, GARTNER INC.

> It's pretty obvious that you don't need mainframes to do large-scale transactions.

ALAN WALKER, VICE PRESIDENT, SABRE HOLDINGS CORP.

Geek's Garden

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

IBM Puts Its Spin On Magnetism

IBM SCIENTISTS have developed a powerful new technique for exploring and controlling magnetism at its fundamental atomic level. The new method promises to be an important tool not only in the quest to understand the operation of future computer-circuit and data-storage elements as they shrink toward atomic dimensions, but also in the quest to lay the foundation for new materials and computing devices that leverage atom-scale magnetic phenomena.

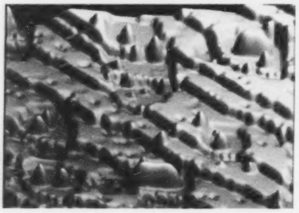
"We have developed a window into the atomic heart of magnetism," says Andreas Heinrich, research staff member at IBM's Almaden Research Center in San Jose. "We can now position atoms and then measure and control their magnetic interactions within precisely designed structures."

The new method, called spin-excitation spectroscopy, uses IBM's low-temperature scanning tunneling microscope designed for use with a broad range of magnetic fields up to 140,000 times stronger than the Earth's. The researchers first move atoms into position and then measure the interactions between their atomic spins, which are the fundamental sources of magnetism.

IBM researchers expect to use this new technique in the future to do the following:

- Explore the limits of magnetic data storage.
- Determine the feasibility of spin-based wires and a spin version of the molecular-motion cascade.
- Investigate how engineered spin interactions could be applied to quantum information systems.

The new research builds upon the IBM team's development in late 2004 of spin-flip spectroscopy – a method for measuring magnetic properties of single atoms, and a breakthrough step toward quantum computing.


SOURCE: IBM

An 8- by 28-nanometer area of the terraced copper and copper-nitride surface where IBM's magnetism experiments were performed. The scientists tested magnanese atom structures on both the conducting and insulating surfaces. The visible humps on the surfaces are the manganese structures, one to 10 atoms long.

Page compiled by Tommy Peterson.

GROVES OF ACADEME

New Chip Gives Sharper Pix on Less Power

IMAGING CHIPS revolutionized the photography industry, and now the chips themselves are being revolutionized by researchers at the University of Rochester. A pair of recently patented technologies may soon enable power-hungry imaging chips to use just a fraction of the energy they use today and capture better images to boot – all while enabling cameras to shrink to the size of a shirt button and run for years on a single battery.

The University of Rochester team of Mark Bocko, professor of electrical and computer engineering, and Zeljko Ignjatovic, assistant professor of electrical and computer engineering, has designed a prototype chip that can digitize an image at the level of individual pixels. The researchers are now working to incorporate a second technology that will compress the image with far fewer computations than the best current compression techniques.

"These two technologies may work together or separately to greatly reduce the energy cost of capturing a digital image," says Bocko. "One is evolutionary in that it pushes current technology further. The second may prove to be revolutionary, because it's an entirely new way of thinking about capturing an image in the first place."

Mark Bocko and Zeljko Ignjatovic

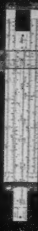
The first technology being developed integrates an oversampling "sigma-delta" analog-to-digital converter at each pixel location in a CMOS sensor. Previous attempts to do this on-pixel conversion have required far too many transistors, leaving too little area to collect light. The new designs use as few as three transistors per pixel, reserving nearly half of the pixel area for light collection. Initial tests on the chip show that at video rates of 30 frames per second, it uses just 0.88 nanowatts per pixel – 50 times less than the industry's previous best. It also trounces conventional chips in dynamic range, which is the difference between the dimmest and brightest light that can be recorded. Existing sensors can record light 1,000 times brighter than their dimmest detectable light, a dynamic range of 1:1,000, while the Rochester technology already demonstrates a dynamic range of 1:100,000.

The second technology has taken many researchers by surprise. Using a method called focal-plane image compression, Bocko and Ignjatovic have figured out a way to arrange photodiodes on an imaging chip so that compressing an image demands as little as 1% of the computing power usually needed.

DIFFERENCE ENGINES

Slipsticks to the Moon

IN THE EARLY 1600s, John Napier, a Scottish mathematician who had previously developed Napier's Bones, which were multiplication tables inscribed on strips of wood or bone, invented logarithms. After the publication of Napier's work, Edmund Gunter of Oxford University developed a calculating device with a single logarithmic scale, which, with additional measuring tools, could be used to multiply and divide.



In 1630, William Oughtred of Cambridge University invented a circular slide rule, and in 1632, he combined two Gunter rules held together with both hands, to make a device that is recognizably the modern slide rule. The slide rule was to remain in common use for more than 300 years.

In 1815, Peter Roget (the Scotsman who gave us the thesaurus) invented the log-log slide rule, which included a scale displaying the logarithm of the logarithm. This allowed the user to directly perform calculations involving roots and exponents. This was especially useful for fractional powers. In 1859, a French army lieutenant named Amédée Mannheim developed a slide rule that was then manufactured by a firm of national reputation, which led to its being adopted by the French Artillery.

In 19th century Germany, one observatory used a steel slide rule about 2 meters long. Since astronomical work required fine computations, it had a microscope attached, giving it accuracy to six decimal places.

Buzz Aldrin took a slide rule to the moon.

Throughout the 1950s and 1960s, the slide rule was the symbol of the engineer's profession. Pickett brand slide rules were the standard in the Apollo space program; a Pickett N600-MES (6 inches long, with a magnifying cursor and in "Eye-Saver" yellow) was standard equipment on all Apollo flights. Slide rules not only made getting to the moon possible, they went along for the ride.

As useful and ubiquitous as they had been, slide rules quickly passed from use with the rise of portable electronic calculators in the late 1960s.

EMC^{2}
where information lives®

When information
comes together,
Toyota can build a
faster car in two weeks.

Information lives at Toyota Motorsport. With the help of EMC, they raced into Formula 1 contention. A combination of EMC® software, services, and systems enabled them to access performance-critical data faster and easier. So now the team can reengineer their car between races. Manage information at 240-plus miles per hour. And continuously improve their car and their results. Learn how EMC can help you turn your information into a competitive advantage. Visit www.EMC.com/ilm.

EMC^{2}, EMC, and where information lives are registered trademarks of EMC Corporation. All other trademarks used herein are the property of their respective owners. © 2006 EMC Corporation. All rights reserved.

These Rules Will Keep Users in Their Place

The rule of least privilege and separation of duties will keep users out of network places they don't belong. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

AS INFORMATION security professionals, we tend to throw around certain terms when we talk about how information security should be implemented. Lately, when I've gone to meetings or written an e-mail that gives me a chance to evangelize about our security needs, my terms of preference have been "rule of least privilege" and "separation of duties."

The rule of least privilege arises in regard to our client virtual private network. This IPsec VPN, which is operated using Nortel Networks Ltd.'s VPN Gateway, allows our employees to work remotely as if they were on our internal network, with access to most applications, services and internal infrastructure.

In contrast, Secure Sockets Layer VPNs allow the remote use of only those protocols and applications that are supported by the vendor of the SSL VPN. For example, most SSL VPNs won't support the remote use of our implementation of BMC Software Inc.'s Remedy, which we use as our IT service management application. But our client-based IPsec VPN seamlessly allows users to launch Remedy while on the road and connected to our wireless infrastructure.

The limitations of an SSL VPN can actually be desirable. Many of our company's contractors, vendors, suppliers and partners are given access to our portal environment through an SSL VPN, which naturally limits what they can access. But some of them require client VPN access because they need to use applications that aren't available via the SSL VPN.

At the heart of a client VPN are profiles. Currently, we are using a single profile for every user with access to the VPN, and it provides full access to the network. The idea was to provide an officelike environment for remote users, but naturally, we don't want to give full infrastructure access to nonemployees such as partners, suppliers and contractors.

In fact, often there is no good reason to give full-time employees full access to the network. For example, someone in marketing shouldn't be able to access the administrative interface of a production Oracle database containing financial information.

Of course, that marketing employee wouldn't have the proper credentials to actually access the financial database, but it's still risky to give users the *potential* to access things they shouldn't be allowed to see. This is where the rule of least privilege comes in. With it, you give a person only enough access so that he can do his job — nothing more, and nothing less.

What lies behind the rule of least privilege is a concept called dynamic groups. When placed within a dynamic group, a user's role in the company dictates which areas of the network he can and can't access. For example, when a systems administrator authenticates to the VPN, his profile should allow him to access critical servers. Someone from my information security team should be allowed to access certain security-related applications.

For dynamic groups to work, the VPN concentrator has to be able to dynamically create profiles that ideally would be based on attributes within our Active Directory setup. An employee whose Active Directory attribute set identifies him as part of the Unix group should be granted access appropriate to someone working on Unix servers. And someone from shipping and receiving should be granted very limited access to a few applications. The concept is all well and good, but before we can leverage dynamic groups, the network has to be prepared.

> Before we can leverage dynamic groups, the network has to be prepared.

The Ideal and the Real

And that brings us to separation of duties. To use job functions as a means for controlling access to our network, the network has to be segmented properly. Unfortunately, this was never done before I came on board as the security manager, and making a change to the environment to segment the network according to criticality is no trivial task. Virtual LANs and networks have to be resized and configured. Routing changes need to be put in place. Firewall rules, servers and applications have to be modified. And the list goes on.

Ideally, we would segment the network so that a single segment would contain all employee desktops, except for those of certain users, such as systems administrators and network engineers, who would be situated on an isolated network with a trust relationship to the production data center. Within the server farm, there would be separate networks and virtual LANs for Web, application and database servers. This arrangement would let us control the relationships between these servers and help prevent malicious activity.

For example, in a three-tiered application such as SAP, there is no reason for a Web server to have any relationship with a database server. The relationship should be between the Web server and the application server. These are the types of separations of duties that I am trying to achieve.

There will have to be compensating controls for certain situations that are likely to arise. For example, placing systems administrators on an isolated administrative network might prove to require too much effort. That could result from our use of the DHCP (Dynamic Host Configuration Protocol) or simply because of the way our network is architected. A compensating control in this case might be to place a bastion host — a gateway between the critical network and the general corporate network — on a separate network and have that bastion host be the only server that can access the production environment. The purpose of a bastion host is to defend against attacks aimed at our critical network. We would then force all administrators to authenticate to the bastion host before accessing any of our production servers.

I don't imagine I'll win many friends with my recommendations, but I will be able to sleep better knowing that our infrastructure is a bit more secure than it was before. ▸

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

Selecting MPLS VPN Services, by Chris Lewis and Steve Pickavance (Cisco Press, 2006).

Any decent information security professional needs a working knowledge of the most up-to-date networking technologies, such as Multiprotocol Label Switching. The authors are thorough and fairly technical, covering everything from general networking protocols to Dynamic Multipoint VPNs. As a security guy, I especially liked Chapter 7, which discusses security issues within the MPLS VPN environment. This is a must-have title for security professionals and network engineers alike.

– MATHIAS THURMAN

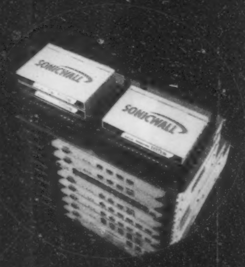
No Negligence Ruled in Data Theft

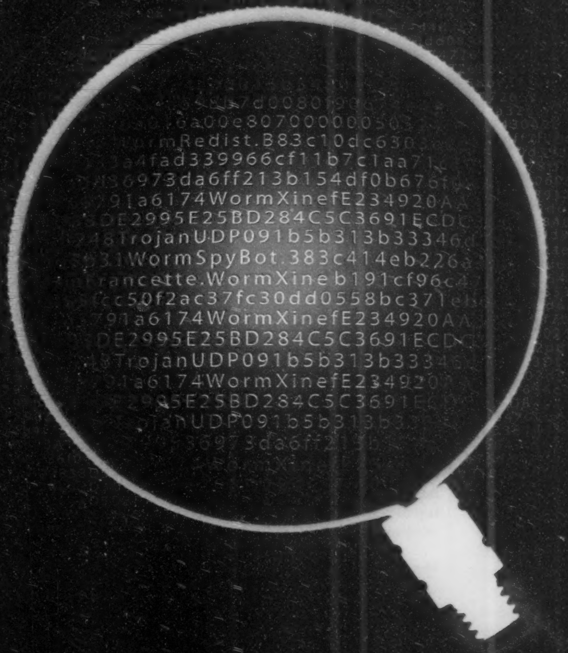
U.S. District Judge David Doty in Minnesota ruled last month that Wells Fargo Bank was not negligent in a case of data theft. Two customers had filed a class-action lawsuit against the bank after computers containing customer information, including names and Social Security numbers, were stolen in 2004. Doty ruled that Wells Fargo was not negligent because the information was never misused by the thieves.

Rootkit Attacks Up

According to statistics from McAfee Inc.'s AVERT Labs group, the number of rootkit attacks detected in the first quarter of 2006 was up 700% from a year earlier. AVERT also found that the use of stealth technologies has increased more than 600% in just three years.

IS YOUR NETWORK SAFE FROM EVERY THREAT?




WormRedist.B83c10dc630
a4fad339966cf11b7c1aa71
36973da6ff213b154df0b676f
91a6174WormXinefE234920AA
DE2995E25BD284C5C3691ECDC
TrojanUDP091b5b313b33346
WormSpyBot.383c414eb226a
rancette.WormXineb191cf96c4
c50f2ac37fc30dd0558bc371eb
91a6174WormXinefE234920AA
DE2995E25BD284C5C3691ECD
TrojanUDP091b5b313b333
a6174WormXinefE234920
95E25BD284C5C3691E
UDP091b5b313b
6973da6ff21

TAKE A DEEPER LOOK.

New network threats emerge every day, and they're extremely elusive. It's time for a deeper level of protection: SonicWALL® network security solutions. SonicWALL solutions are built on a deep packet inspection architecture that can examine every packet of data before it enters a network. When deployed with the SonicWALL Gateway Anti-Virus, Anti-Spyware and Intrusion Prevention Service, viruses, Trojans, spyware, phishing attacks, and other emerging threats are stopped dead. Unlike stateful inspection, SonicWALL solutions inspect 100% of network traffic. And because they're tuned to handle deep inspection at high speed, they provide exceptional levels of network performance at load conditions. Want to learn about deep protection products and services that don't sacrifice performance? Go to **www.sonicwall.com/magnify** or call **1.888.557.6642** for more details.

NETWORK SECURITY
SECURE REMOTE ACCESS
CONTENT SECURITY
CONTINUOUS DATA PROTECTION
POLICY & MANAGEMENT

SONICWALL
PROTECTION AT THE SPEED OF BUSINESS

©2006 SonicWALL, Inc. SonicWALL and the SonicWALL logo are registered trademarks of SonicWALL, Inc.

Virtual Machines

DEFINITION

A virtual machine is a self-contained operating environment, created by a software layer, that behaves as if it were a separate computer. Benefits of creating virtual machines include better exploitation of powerful computing resources and isolation of applications to prevent cross-corruption and improve security.

BY JAN MATLIS

QUICK STUDY

AT THE simplest level, computing environments are thought to consist of hardware, an operating system that runs on the hardware and applications that run on the OS — though in embedded systems, the operating system is sometimes eliminated and applications run directly on the hardware. The OS is aware of all the capacity and capability of the underlying hardware and controls it directly.

If another layer of software were placed between the OS and the CPU, then the OS would know only what that extra layer of software told it. Its understanding of the capacity and capability of the underlying hardware would depend on the intervening software layer, and it would be able to control the underlying hardware only in ways the intervening layer of software allowed it to.

The intervening layer of software could tell the OS everything there was to know about the hardware and simply pass through control directives without translation. But it also might not reveal everything about the underlying hardware and might add some control of its own as it passes on the control directives to the OS.

In either case, the configuration would not be the standard tripartite configuration. It would be one of the many possible configurations that is called a virtual machine.

Of course, there are servers, networks and Web interfaces, as well as other devices and interfaces, that add nuance and complexity to computing environments. But using a software layer to package a set of computing resources and behaviors and to present it as an available computing environment is at the core of what it means to create a virtual machine.

A virtual machine is a computing environment whose set of resources and behaviors is built (through software) on top of some other computing environment.

Hypervisor VMs

Virtual machines are at the core of server technologies like VMware Inc.'s ESX Server and the open-source Xen virtual machine monitor. Both of these products offer servers that run multiple x86-based OSs simultaneously. Their approaches are slightly different variations of what are called hardware-level, bare-metal or hypervisor virtual machines. The intermediary software layer (called the virtual machine monitor or hypervisor) is between the OS and the hardware. The hypervisor gives all the OSs that are running the illusion that they are the only OS running on the hardware.

Running multiple OSs on one server platform offers several advantages. It makes it possible to more fully use the resources of very powerful servers, provide backward compatibility for legacy programs and partition applications to different OSs so they can't corrupt one another.

VMware uses transparent virtualization, which means that the OSs that run on the hypervisor do not need to be modified. Xen uses paravirtualization, which means that it needs to modify the OSs to make them run simultaneously on the hardware. Xen claims that paravirtualization increases speed and efficiency.

Hosted VMs

Microsoft Corp.'s Virtual PC and VMware's GSX Server and Workstation are called hosted virtual machines. In these products, the VM is like any other application running on an OS. The VM application is divided into an intermediary software layer, an OS and an application running on that OS.

This scheme is less efficient and less powerful than that used for hypervisor servers, but it provides the same kind of advantages, allowing a user to run legacy programs and to partition applications from the rest of the system. A user who wants to visit dangerous Web sites, for example, could add a layer of protection by doing his surfing via a virtual machine.

Application-Level VMs

Application-level VMs, such as the Java virtual machine, are similar to the hosted model in that they run as applications. These VMs, however, combine the intermediary software layer with the OS. The Java VM runs like an application on the native OS, and the Java application runs on the VM.

One of the advantages claimed for this programming paradigm is that a Java program will run on any Java VM without recompilation. That is left to the provider of the Java VM, which must make it run on a variety of native OSs.

Parallel Virtual Machine

The parallel VM is a slightly different approach to creating a virtual machine. In this case, the intermediary software layer exists as a daemon, or a server program, along with a set of library calls, which must be compiled into the application that is going to be run on the parallel VM. The library calls, which interact with the server programs, make a network of computers appear to be a single computer with parallel processors.

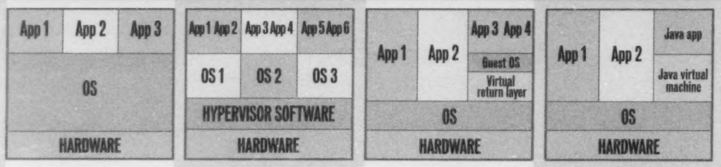
As the saying goes, you can make software do anything. Although efficiency and speed may be an issue, as long as there is an intermediary software layer, virtualization can be made a reality. ▸

Matlis is a freelance writer in Newton, Mass. You can contact him at jmtgpcmcm@netzero.net.

Are there technologies or issues you'd like to learn about in QuickStudy? Send your ideas to quickstudy@computerworld.com

To find a complete archive of our QuickStudies, go online to
computerworld.com/quickstudies

VIRTUAL CONFIGURATIONS



Standard configuration, no virtual machines

The applications run directly on the OS, which runs directly on the hardware.

Hardware-level or hypervisor virtual machines

With the hypervisor layer between the hardware and OSs, each OS believes it is running in the standard configuration, when in fact it is sharing the resources of the underlying hardware.

Hosted virtual machines

The virtual machine runs as an application on the host OS. There is an intermediary layer of software between the host OS and the guest OS.

Application-level virtual machines

A Java virtual machine runs as an application on the OS. The Java application runs on the Java virtual machine.

Advertisement

change artists

Host John Gallant

The CEO and CIO of FedEx are meeting on May 9th.

We booked the room.

Watch "Change Artists"

A conversation on strategy, technology and change. With FedEx CEO Fred Smith and CIO Rob Carter. A live interactive Web event, May 9th at 11:00 a.m. EST. Moderated by IT journalist John Gallant. Produced by HP and broadcast by CNN and CIO magazine.

Sign up now at hp.com/go/changeartists

hp

Advertisement

“Change Artists” explores the dynamic pairing of strategy and technology.

We invite you to join the conversation.

CEOs and CIOs who create opportunity are change artists. “Change Artists” is a live Web series that explores how they do it.

On May 9th at 11:00 a.m. EST, we will feature CEO Fred Smith and CIO Rob Carter of FedEx.

FedEx Corporation is a $31 billion global transportation and logistics company. More than 260,000 employees and independent contractors worldwide handle more than 6 million shipments each business day. CEO Smith and CIO Carter will explain how they're staying ahead of potential issues with those 6 million shipments.

They'll also answer your questions live.

But “Change Artists” goes beyond the CEO/CIO conversation. It's a program designed to help you manage—and master—change.

Log on to hp.com/go/changeartists. You'll find practical ideas from CIO magazine. Interactive tools that reveal areas of change in your company, designed by HP. As well as revealing case studies on Fortune 500 companies.

And, of course, you'll get the latest thinking on key issues raised during the “Change Artists” program. For example, IT consolidation.

Consolidation is undergoing dramatic change. It's not just about cost savings, it's about increasing business value.

The “Change Artists” website currently provides a detailed overview of IT consolidation, and reviews the key elements of a consolidation program. You'll learn about companies that have moved from IT as a cost center to IT as a driver of business value.

“Change Artists” taps into executive insight, industry analysis, and the unique perspective of global business and technology leaders. The goal: to help inspire your own transformation journey.

Everyone talks about change. “Change Artists” will make you a leader in that conversation.

Get started at hp.com/go/changeartists

Produced by: hp

Broadcast by: CNN. CIO

change artists

©2006 Hewlett-Packard Development Company, L.P.

BRIEFS

Iona, AmberPoint Team on SOA Tools

■ Iona Technologies Inc. and AmberPoint Inc. have announced a new partnership to integrate their tools to give users more visibility into messages and business processes flowing through a service-oriented architecture. The partnership calls for the integration of Iona's Artix enterprise service bus with AmberPoint's SOA Management System. The deal marks the first time AmberPoint has integrated its SOA management software with an ESB.

Sarbanes-Oxley Tool Updated

■ Stellent Inc. has unveiled Version 7.6 of its Stellent Sarbanes-Oxley Solution compliance software. It features enhanced master component and process libraries for improved centralized management, as well as internationalization capabilities for users who speak Dutch, French, German, Japanese, Korean, Portuguese or Spanish. Also new in Version 7.6 are selective-control testing capabilities that let auditors select control sets that span multiple processes, according to Stellent. The product is available now starting at $100,000.

Acronis Upgrades Backup Imaging App

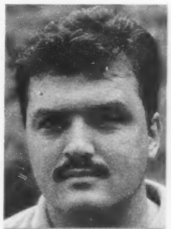
■ Acronis Inc. has rolled out the latest version of Acronis True Image. The backup imaging application now allows operating systems and other applications to be restored to system hardware that's different from the original hardware. This capability, as well as the ability to boot a remote computer to restore a system partition, is being added to Acronis True Image Enterprise Server, Acronis True Image Server for Windows and Acronis True Image Workstation. Pricing starts at $999 for Acronis True Image Enterprise Server 9.1, $699 for Acronis True Image Server for Windows and $79.99 for Acronis True Image Workstation.

DOUGLAS SCHWEITZER

Factory Settings — Insecure by Default

SO, you just set up a shiny new wireless router at home or at your office. As convenient as it is to have no strings, or at least wires, attached, that new router may have punched a hole in your security schema and set you up for unwanted trouble. The reason you could now be vulnerable is simple: default settings. Remember, manufacturers often turn off security and certain other features by default so that their products will be easier to set up and integrate into a wide variety of networks.

Unfortunately, this default dilemma isn't limited to wireless routers. Just about every new laptop these days is powered by the Windows XP operating system and incorporates built-in wireless capability. To make these laptops easy to integrate into wireless networks, XP may be set so that when a user boots up the operating system, Windows will look for any available wireless connection.



DOUGLAS SCHWEITZER is a freelance writer and Internet security specialist in Nesconset, N.Y. He can be reached at **dougnsak@juno.com**.

Many so-called hot spots know this and make it as easy as possible for you to use that laptop or handheld wireless device to access the Internet. Toward that end, they may have turned off the WEP (Wired Equivalent Privacy) security feature by default. In fact, many public wireless access points, like those in hotels and airports, don't enable WEP, although that may soon change as people become more aware of the dangers of this default.

When I recently installed my Verizon-provided Westell wireless DSL router/gateway, it was factory-set at 64-bit WEP by default. Sounds nice, but that's just too weak for me, so I quickly switched that to 256, the maximum supported.

The problem is that WEP itself is flawed and weak, and, with the right tools and knowledge, it's fairly easy to circumvent, no matter what bit of encryption is used. The truth is, using WEP is better than not using anything at all for keeping the general public from spying on your data, but it's far from an ideal defense.

This is why I strongly recommend that home or small-business users consider using WPA (Wi-Fi Protected Access) in all their home computers and network devices. WPA and its more recent iteration, WPA2, are more secure than WEP. There is one caveat to using it, however: All your wireless devices must be WPA-capable in order to play together.

Another default setting that can help to undermine your best security intentions is the automatic broadcast of a service set identifier. Simply put, an SSID is the name of a wireless LAN and can be thought of as a label that distinguishes one WLAN from another.

Wireless access points are often preconfigured with a default name for the SSID, and that is usually vendor-specific — such as "linksys," "netgear" or perhaps a generic name like "default." An SSID may contain up to 32 case-sensitive alphanumeric characters. Because the SSID is configured within your access point, I recommend changing it to one of your own design.

Another point of concern is the SSID broadcast. Most wireless routers or access points by default will automatically transmit their network name — the SSID — into open air at regular intervals so they can be found and connected to. By disabling the SSID broadcast, your wireless access point becomes invisible to all except wireless clients that already know the SSID.

The truth is that the security gained here is marginal at best, since anyone with the right packet-sniffing tools can still detect the SSID by sniffing different messages in the Wi-Fi protocol. Despite this shortcoming, I still like to disable the SSID broadcast, because it does make it less likely that casual intruders will discover and attempt to enter your wireless network.

Another feature that is usually turned off by default is MAC (media access control) address filtering. A MAC address is a hexadecimal hardware address that identifies each node of a network. Each wireless client will have one, and they can't be changed because they are "burned" into the hardware. You can, however, control any client access to your wireless network by turning on "MAC filtering" in your access point or wireless router.

With this done, you can specify a list of approved or allowed MAC addresses. When MAC filtering is being used, only those wireless clients with their MAC addresses listed will be permitted to access the network.

While straight-from-the-box wireless computing is an appealing thought, it should be just that — a thought. Considering the potential for abuse, it's better for users to invest a little time and effort to configure some settings and engage some security measures. ▸

WANT OUR OPINION?
For more columns and links to our archives go to:
www.computerworld.com/columns

COMING THIS SPRING ... THE NEW COMPUTERWORLD.COM

CONTINUING COVERAGE
Microsoft Legal Issues ▸

COMPUTERWORLD

JUMP TO More Resources

Home
+ News
Newsfeeds | XML
– Knowledge Centers
+ Business Intelligence
+ Careers
+ Development
+ Hardware
+ Government
+ IT Management
+ Mobile/Wireless
+ Networking

SPECIAL REPORT

Siebel sells out to Oracl

Oracle today announced its secon
in just 9 months, this time
agreed on a deal
share. Rea

WHAT'S INSIDE

The No. 1 Enterprise IT Web site just got
Faster
Richer
Deeper
... and a little more colorful.

COMPUTERWORLD

MANAGEMENT

04.24.06

Q&A

Managers' Forum

When management demands project perfection on an unreasonable deadline, you've got a lot of educating to do, says Paul Glen. He also discusses the differences between executive MBAs and garden-variety MBAs. **PAGE 44**

Career Watch

IT staffing expert Katherine Spencer Lee sees a war for IT talent on the horizon. Plus, a Michigan organization wants to help high school girls "get" IT, and the feds release a report on high-tech job prospects through 2014. **PAGE 46**

OPINION

Global IT: Are You Up to the Challenge?

Like her CIO clients, Barbara Gomolski is excited about the opportunities of a global economy, but she's also concerned that executives could woefully underestimate what it takes to build a truly global IT presence. **PAGE 50**

Turning to Technology

Career changers provide needed pools of potential IT talent. By Mary K. Pratt

THE RÉSUMÉ of your next CIO might look something like that of physician Mitch Morris, newspaperman Dan Gingras or accountant H. James Dallas. Your next application developer could be a nurse manager; your next help desk staffer, a mill worker. Your next IT manager could come from marketing.

Many people are making those kinds of career changes, and as a confluence of factors transforms the U.S. workforce, IT managers need to be on the lookout for potential talent, regardless of its place of origin. "Changing demographics are going to force them to do that," says Gretchen Coch, director of the skills development program at the Computing Technology Industry Association.

The upcoming retirements and semi-retirements of baby boomers will take millions of workers out of full-time employment. Meanwhile, there aren't enough young people coming up through the ranks to fill the expected vacancies. And, particularly problematic for IT leaders, the number of college students in technology and computer-related programs has dropped. "You put all this together, and it's quite a big issue," says Claire Schooley, an analyst at Cambridge, Mass.-based Forrester Research Inc.

But the good news is that more people are willing to make major career changes than in the past.

Schooley says that human resources managers have been watching these trends for a while and developing strategies to cope with them. IT managers need to do the same. They have to broaden their recruitment and retention efforts to ensure that they're capturing those career changers and aging boomers who, with their business experience and IT acumen, can really drive a business forward.

CHRISTOPHER NIELSEN

"That's a pool of talent not to be ignored," says Leon J. Leach. As executive vice president of the University of Texas M.D. Anderson Cancer Center in Houston, Leach oversaw Morris' performance there as CIO.

Unusual Résumé

Morris' work experience is quite different from that of most CIOs. He started as a surgical oncologist at M.D. Anderson in 1985, four years after graduating from medical school. He became interested in how technology could improve the delivery of health care and volunteered to serve on technology-related committees.

His avocation became his job when he took the hospital's top tech position in 1997. He worked as CIO there until 2001, when he left to join First Consulting Group in Long Beach, Calif.

Leach acknowledges that Morris wasn't a techie but says he "displayed an aptitude and interest" in IT. However, being an IT natural doesn't make up for years of experience coming up through the ranks, "so Mitch had to make sure he had good people working for him," Leach says. For example, Morris created a deputy CIO position and hired a strong tech person to fill it.

Morris himself concedes that his technical expertise wasn't the same as that of someone who had spent a career in the trenches. But he says that didn't hinder him. "To be a successful CIO, you have to appreciate how the technology works, you have to know how to manage people, but you don't have to go into a data center and play with cables," he says.

Morris says he had something more valuable: an understanding of how the hospital worked and what end users needed. "If you understand the business and are able to drive the business, that's as important as making sure the trains run on time within IT," he says.

Not everyone agreed with that point, at least initially. "There's always skepticism. There are challenges that you can encounter where people paint you into a position because of your background," Morris says. "You have to prove yourself with results."

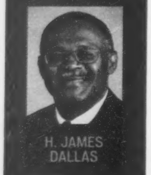
Initially, for example, vendors would explain their products "like I had a learning disability," Morris says. His approach with them was direct: "I'd just say, 'Let's cut to the chase.' And once I got to know people, [my background] was not an issue."

The Middleman

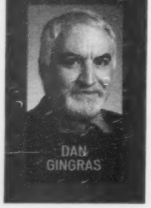
Dallas encountered similar skepticism when he moved from accounting into the IT department at Atlanta-based Georgia-Pacific Corp. He started there as a cost accountant shortly after graduating in 1983 with a bachelor's degree in accounting. As the company advanced its computer systems, Dallas says he saw an opportunity to be "the man in the middle" — the one who understands the business requirements as well as the technology.

He took evening programming courses at Georgia State University and joined the IT department as a programmer trainee in late 1984 — a time, he says, when everyone else in the department held tech-related diplomas. "They were skeptical of my abilities in the beginning," Dallas recalls. But he proved himself to his colleagues and spent the next 20 years working up the ranks at Georgia-Pacific, moving between management jobs in IT and the business divisions. He became CIO in 2002 and retired late last year.

Career Changers


H. JAMES DALLAS

MITCH MORRIS


DAN GINGRAS

Changing Times

CIOs must increasingly consider recruiting people like Dallas and Morris to fill their IT positions, says Bill Gilbert, managing director at Futurestep, a Korn/Ferry International company in Los Angeles that provides outsourced recruiting services.

They'll also have to be more flexible. Studies show that many baby boomers will continue to work in some capacity beyond retirement age. Many will want reduced hours and responsibilities as well as flexible schedules. Some might also want to retain their senior-level benefits, such as long vacations. "The baby boomer group is going to have a lot of different effects on what jobs look like, what retirement is," Schooley says.

IT shops are already making adjustments, because the market for workers has tightened considerably in the past year or so, says Gilbert. He expects that the competition for talent will only become fiercer as boomers retire en masse.

The Evolving Workforce

Working Longer

44% of global executives say they plan to continue working past the age of 64.

15% of those plan to work past the age of 70.

BASE: Nearly 2,000 global executives
SOURCE: 2005 KORN/FERRY INTERNATIONAL SURVEY

Career Change Likely

62% of global executives say it's "highly likely" they'll make a major career change before retirement.

26% say it's "likely" they'll do so.

BASE: 1,700 global executives
SOURCE: 2005 KORN/FERRY INTERNATIONAL SURVEY

Training Decisions

85% of IT professionals say they decide what IT training and education they need based on their own career plans.

8% make choices based on their employers' requirements or recommendations.

BASE: 462 IT professionals
SOURCE: 2005 COMPTIA SURVEY

An Aging Workforce

31% of private-sector employees are 45 years of age or older.

46% of government employees are 45 years of age or older.

SOURCE: 2005 FORRESTER RESEARCH INC. REPORT

IT hiring managers will have to be more receptive to candidates who have taken e-learning and noncollege technology courses, Gilbert says. They also need to work with other managers to identify rising stars throughout the company and provide them with cross-functional training. "You have to manage your own talent across the enterprise," he says, adding that such direction has to come from the top to ensure that companies identify and track such individuals and get them the training and education they need. "Companies need to be in touch with their employees," Gilbert says. "That's key to hanging on to them."

All Welcome

Such strategies have worked for Donald Newsom, vice president of IT at Caraustar Industries Inc., an integrated manufacturer of recycled paperboard in Austell, Ga. Newsom started as a bookkeeper at Caraustar in 1974, before moving into what was then data processing. He now draws many of his own new IT workers from other fields. Some started as switchboard operators, receptionists and mill workers.

Newsom sends these workers for focused training or college degrees or pairs them with mentors. "I will take a person who gets along very well and works hard, and I can make them anything they want to be," he says.

Newsom says he can do this because of the culture he has established. Because he and other managers came to IT from other business disciplines, new hires from other fields know they're welcome. He invests in training and development. And he tracks employees' interests and progress, which allows him to know their strengths and talents.

"It's perfectly acceptable for someone to come up through another discipline, as long as they know that managing IT is a discipline all its own — and they get a graduate degree or get the credentials to do that," says Dan Gingras, a partner in the IT leadership practice at Tatum LLC, an executive consulting and services firm in Atlanta.

Gingras should know. He worked in journalism for seven years before he learned programming skills in the early 1980s. He worked his way up to serve as CIO, CTO and even CEO at numerous companies.

"I think we're going to see many more [IT] people coming from inside the company but outside the IT organization," he says, adding that with the changing demographics, smart CIOs will be welcoming them. ▶

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

AMD

You could've powered 2.4 million new servers, and the office park to put them in

with the amount of energy wasted by non-AMD powered servers.

How long have you been putting up with servers that waste power, waste money, and thanks to slow performance waste everyone's time? Now you can make your data center the coolest room in the building without replacing your existing power and cooling envelope. AMD Opteron™ processor-based servers, on the other hand, are designed to run efficiently, run cool, and thanks to dual-core technology deliver increased performance. To learn more about maximum performance, cost savings, and the **power of cool** visit www.amd.com/lessenergy

AMD
64
Opteron

© 2006 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, AMD Opteron, and combinations thereof, are trademarks of Advanced Micro Devices, Inc.

[MANAGERS' FORUM]

WITH PAUL GLEN

Welcome to the Managers' Forum! I hope this monthly column will provide a lively exchange of ideas with IT managers. I'll do my best to answer your questions, and some of your responses will run alongside in "Readers Talk Back." Please send your questions, comments and critiques to me at pglen@c2-consulting.com.

Q Management wants perfect projects but won't allocate enough time to test our products. How do I persuade them to allot more time?

Before we consider managing your boss's demands, let's address one of the assumptions behind your question. You seem to assume that given adequate time, you can actually deliver perfect products. This is a dangerous delusion. Even given infinite time, you're unlikely to achieve perfection, but with enough time, you can deliver craftsmanlike work. So before trying to persuade your boss to lengthen testing time, you need to adjust your own definition of success.

And now, to your boss. A couple of different approaches come to mind. First, let's consider the professional approach to the problem. Start by telling the brutal truth. Explain to your boss (who probably already understands this anyway) that perfect projects and bug-free products don't exist. When a manager asks you for something that's not possible, don't simply salute and say yes. It's your responsibility to let him know about reality. If I ask my doctor to make me 29 years old, and he says OK and starts prescribing drugs, that's malpractice. If your boss asks you to deliver perfection and you don't protest, that is a form of malpractice, too. You have the same responsibilities to your supervisors as independent professionals have to their clients.

Next, explain that if quality is to be your first priority, you need to prioritize other constraints on the project: schedule, budget and feature set. Work with management to make appropriate trade-offs given the business situation. If they tell you that all four are top priorities, you'll need to explain that that's not possible.

Of course, not every boss responds well to the constraints of reality, so you may need to couple this with a different approach. Let's call it appealing to his rational self-interest.

When a boss demands perfection, there are usually a few common causes, including personal ambition, self-delusion or pass-through. Personal ambition leads a manager to think that if he can get his people to do the seemingly impossible, then his personal career prospects will benefit. The smarter manager with this motive will not promise his boss as much as he asks from his subordinates, so as to underpromise and overdeliver.

A self-deluded manager believes that great leaders demand and get the impossible. He has come to believe that the sheer force of his demands can overcome the constraints of nature. These are rather dangerous people, since reason often doesn't seem to penetrate too deeply for them.

Finally, pass-through occurs when a manager has a demanding boss himself who asks for the impossible. The manager abdicates his own professional responsibility to manage his manager's expectations and just passes through the request for supernatural acts.

So, to effectively appeal to your boss's rational self-interest, you'll have to guess at his motivation for requesting the impossible. If it's self-delusion or pass-through, you can explain that you are concerned that he and you will look bad by trying to do something so difficult and that you would both benefit from scaled-down expectations.

If your boss is solely motivated by personal ambition, you've got a tough job, since he already knows that he's being unreasonable. You can explain that such unrealistic demands may damage employee morale and productivity. Groups faced with impossible tasks often shut down and deliver nothing. Promising his own boss less and then meeting or exceeding those expectations can serve his purposes better than risking the whole project by losing the support of the staff.

Q Since age 22, I have run health care facilities with an average of 100 employees. I am interested in furthering my education, but I am confused about executive MBA and regular MBA courses of study. What are the differences?

Every degree program is unique, but I can point out some common differences I've noticed between regular and executive MBAs.

1. The schedule in an executive MBA program is usually adjusted to meet the needs of those in demanding positions.

2. Your peers in the executive MBA program will be experienced managers who are working full time. Peers can make a big difference in the quality of discussion and learning. Given your extensive experience, if you go to a general MBA program populated by twentysomethings who have never managed much of anything, you will probably be disappointed by the quality of group discussion. Also, in an executive program, the people you add to your personal network will be more experienced.

3. Most executive MBA programs cover the same general territory as full-time programs, but not necessarily in as much depth. Working students don't have time to read as much or analyze as many cases as full-timers. Instructors may also skim over some material, figuring that you've already picked it up. ▪

READERS TALK BACK

More on Project Managers and Sponsors

On the question of a project manager being dependent upon outside people, here are some approaches I have used in the past in similar situations:

- Communicate your needs early and often to outside stakeholders and their supervisors. Make sure they know what is coming so that they can plan for it. It is often best if you ask for their advice. If you can get them to describe the necessary steps, you will be much more likely to get results when the time comes.
- Establish an informal relationship with your outside stakeholders. Try meeting them for coffee, lunch or general bull sessions. It makes it much easier to discuss conflicting interests if you have previously established a friendly relationship. You may not always get everything you want, but you can negotiate fair trade-offs.
- Use periodic risk-analysis sessions to prebrief your sponsor on potential problems. Don't wait for the problem to arise before letting your sponsor know about it.
- Often, your sponsor can provide subtle backdoor influence regarding departments outside your direct control. Don't be a whiner, but dependencies on other personnel should be discussed as a risk far in advance. And in particularly political environments, a mitigation plan should be discussed with your sponsor.

Rarely does a project manager have control over all of the people and things that may affect his project. In the best case, communications, both formal and informal, can prevent difficulties from arising. But in the worst case, it ensures that the difficulty is not a surprise to anyone. – **W.M.**

Thanks for your thoughtful comments. Great ideas all. Thanks for sharing the techniques. I think that you're right. No amount of methodology or formal commitment can substitute for a strong professional relationship with the sponsor.

– PAUL GLEN

AMD

You could've hired 250 engineers, 570 IT support people, 5,235 interns, and one new CIO

with the amount of money wasted by non-AMD powered servers.

How long have you been putting up with servers that waste power, waste money, and thanks to slow performance waste everyone's time? Now you can make your data center the coolest room in the building without replacing your existing power and cooling envelope. AMD Opteron™ processor-based servers, on the other hand, are designed to run efficiently, run cool, and thanks to dual-core technology deliver increased performance. To learn more about maximum performance, cost savings, and the **power of cool** visit www.amd.com/lessenergy

AMD 64 Opteron

© 2006 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, AMD Opteron, and combinations thereof, are trademarks of Advanced Micro Devices, Inc.

Career Watch

HELPING GIRLS GET IT

One group that is trying to do something about the dearth of students entering the IT profession – and aiming specifically at girls – is the Michigan Council of Women in Technology. It was the spark behind the formation of a club at University High School in Ferndale, Mich., with the catchy name GET IT (which is an acronym of the not-so-catchy Girls Exploring Together Information Technology). The idea behind the club, according to a story in the *Detroit Free Press*, is to prepare girls for careers in computer technology, math and science.

RFID Talent Pool

CompTIA has launched RFID+, a vendor-neutral professional certification of skills in radio frequency identification technology that addresses the needs of RFID hardware and software manufacturers, value-added resellers, training developers and end users of the technology. The certification was developed using contributions from more than 20 organizations at the forefront of the RFID industry.

75% **Percentage of companies that don't believe there is a sufficient pool of talent in RFID technology from which to hire.**

Base: 80 mostly North American companies

SOURCE: THE COMPUTING TECHNOLOGY INDUSTRY ASSOCIATION INC., JANUARY 2006

The Future's So Bright, You've Gotta Wear Shades

A government report forecasts tremendous growth in the need for computer scientists and database administrators over the next eight years, but almost none at all for programmers. The report says that increased emphasis on information security is behind the former group's shining prospects. It adds, though, that programming jobs will be harder to find "as software and outsourcing eliminate many routine programming tasks." Things will be especially tough for those without formal education, the report says.

	Employment, 2004	Projected employment change, 2004-14	Percentage change
Computer scientists and DBAs	507,200	200,100	40%
Systems analysts	486,500	153,000	31%
Support specialists and systems administrators	796,800	226,100	28%
Programmers	455,300	9,000	2%

SOURCE: U.S. BUREAU OF LABOR STATISTICS, OCCUPATIONAL OUTLOOK QUARTERLY, SPRING 2006

Katherine Spencer Lee

TITLE: Executive director

ORGANIZATION: Robert Half Technology

Q&A

Robert Half, a provider of IT staff on a project and full-time basis, sees a battle for IT talent in the offing. *Computerworld*'s Jamie Eckle spoke about the trend with Spencer Lee.

What evidence does Robert Half see of a shift in the employment market from employer-driven to employee-driven? We're finding real evidence both in our research and in our everyday interactions with IT hiring managers and job applicants. Research conducted for the Robert Half Technology 2006 Salary Guide finds that average starting salaries for all technology positions are expected to climb 3% this year. Much greater increases are projected for positions like IT auditor (11.2%), lead application developer (5.3%) and network security administrator (5.2%). These gains are a reaction to a tightening labor pool for certain specialties and a sign that employers are beginning to more aggressively compete for candidates.

In addition, according to the Robert Half International and CareerBuilder.com EDGE Report, nearly half of surveyed employees say they are likely to seek new positions at other companies within the next three years. And 60% said they would be more likely to negotiate compensation packages now than even one year ago. Although the survey included respondents from a variety of industries, the results are no less true within IT departments.

In what might be the most telling sign of the shifting market, anecdotal feedback from the IT hiring managers with whom we work suggests they have to work harder to attract and hire the best candidates, many of whom are receiving job offers from multiple employers. CIOs who delay the employment process too long are finding their top choices accepting positions elsewhere.

Is this increasing recruiting costs? While we are unlikely to return to the hiring levels of the late 1990s, companies are increasingly recognizing that some of the recruitment strategies made popular during the dot-com era are needed to attract high-demand IT talent today.

In addition to salary increases and hiring bonuses, many firms are investing in more creative tactics. Innovative firms are targeting individuals with specific skill sets by maintaining a presence at venues where they'll be, such as user group meetings, and tracking blogs aimed at these professionals. Advertising or posting jobs on Web sites and in e-newsletters targeted at those same groups can also be effective.

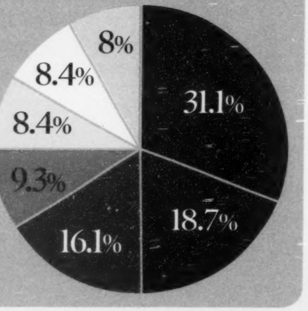
Whatever these increased recruiting costs may be, smart companies realize that they're far less than the potential costs associated with losing top talent to the competition.

Anecdotally, we hear a lot about IT professionals with lots of experience who can't find jobs. How do you explain the discrepancy there? The old passage "a rising tide lifts all boats" applied more to the IT employment boom of the late '90s than it does to growth today. Because CIOs are seeking candidates with very specific skill sets – including technical expertise, industry experience, well-developed soft skills and business savvy – not all IT professionals are feeling the recent gains in employment.

MULTISOURCING

Most job candidates use more than one source for their job searches:

■ Internet, newspaper, other	31.1%
■ Internet, newspaper	18.7%
■ Newspaper only	16.1%
▨ Newspaper, other	9.3%
□ Internet only	8.4%
□ Other only	8.4%
Internet, other	8%



Base: Survey of 5,000 households

SOURCE: THE CONFERENCE BOARD, DECEMBER 2005

PAGE COMPILED BY JAMIE ECKLE.

Got Questions About Storage?

Computerworld's IT Executive Summit Has the Answers

If you are an IT executive in an end-user* organization, apply to attend Computerworld's upcoming complimentary half-day summit on storage.

The rapid proliferation of customer and user data has created a daunting challenge for your storage infrastructure. What strategies can you implement to simplify this increasing complexity? What have other companies done to overcome these obstacles?

At this user-oriented IT Executive Summit, you can find out the latest strategies to simplify your storage complexities. And you can speak directly to the experts who are making this happen in real world settings.

* Complimentary registration is restricted to qualified IT executives only.

Apply for registration today

Contact Jean Lee at 888-299-0155
or visit: www.itexecutivesummit.com

Simplifying Storage: Proven Strategies for the Real World

Thursday, May 11, 2006 • 8:15am to Noon
The Rainbow Room • NBC Building, 65th Floor • Pegasus Suite
30 Rockefeller Plaza • New York, New York

Summit Agenda

7:45am – 8:15am	**Registration and Networking Breakfast**
8:15am – 8:30am	**Introduction and Overview** Julia King, National Correspondent and Executive Editor, Events, Computerworld
8:30am – 9:15am	**Market Outlook and Trends** Jon Toigo, Managing Partner, Toigo Partners International
9:15am – 9:45am	**Zero to 46TB in 157,790,000 Seconds: How Austin Radiological Addressed Its Storage Explosion** Todd Thomas, Chief Information Officer, Austin Radiology Association
9:45am – 10:00am	**Refreshment and Networking Break**
10:00am – 10:30am	**Technology Presentation** Claude Lorenson, Group Product Manager, Storage, Microsoft Corporation
10:30am – 11:00am	**The Olin College Storage Challenge: Growth, Backups, Business Continuity** Joanne Kossuth, Chief Information Officer, Franklin W. Olin College of Engineering
11:00am – Noon	**IT End-User Panel Discussion** Moderator: Julia King, National Correspondent and Executive Editor, Events, Computerworld Panelists: Paul Stubitsch, Corporate IT Director, Wilbert, Inc.; Todd Thomas, Chief Information Officer, Austin Radiology Association; Joanne Kossuth, Chief Information Officer, Franklin W. Olin College of Engineering

Optional Afternoon Sessions

Noon – 1:00pm	**Optional Luncheon**
1:00pm – 2:30pm	**Speed Dating with Solution Partners**

COMPUTERWORLD
IT EXECUTIVE SUMMIT
STORAGE

Selected speakers include:

Todd Thomas
Chief Information Officer, Austin Radiology Association

Joanne Kossuth
Chief Information Officer Franklin W. Olin College of Engineering

Jon Toigo
Managing Partner Toigo Partners International

Claude Lorenson
Group Product Manager, Storage, Microsoft Corporation

Julia King
National Correspondent and Executive Editor, Events Computerworld

Sponsored by:
Microsoft

Co-sponsored by: EQUALLOGIC hp invent KOM NETWORKS LeftHand NETWORKS NORTHERN POLYSERVE sanbolic

Five Steps to More Critical Thinking

Easy exercises to get your mind in gear. By Gary Shea

THE MEMOIR of John Lennon's first wife, Cynthia, tells how the Beatles — ready for new ways of thinking — visited the ashram of Maharishi Mahesh Yogi. Ringo ran out of the canned food he had brought along and went home after two weeks. Paul left a few days later but became a lifelong vegetarian. John and George stayed two months. John wrote a nasty song about the Maharishi, and George integrated the teachings into his daily life.

Twice a year, Bill Gates spends seven thoughtful days in retreat. He reads, reportedly with a self-enforced rule: No e-mail or phone calls. He's been doing it since the 1980s, at first while visiting his grandmother, and in recent years, at a secluded waterfront cottage in the Pacific Northwest. Last year, *The Wall Street Journal* reported that after requesting papers from Microsoft employees, Gates started reading on subjects like computing trends, education product strategy at Microsoft, Virtual Earth, Internet worms, speech synthesis, and office and video-game product strategies.

Not every CIO can arrange a retreat as exotic as the Beatles' or as practical as that of Gates. But there are things you can do during the course of a day to keep your mind sharp and your thinking critical and fresh. Here are a few suggestions:

1. LEARN SOMETHING NEW. "It's hard to find the time, [but you must] keep putting yourself in situations where you learn things," says Lisa Hooks, deputy director of IT services at the Library of Congress. She's making sure that happens by pursuing a certificate in advanced project management from Stanford University, but you can also do it by walking into another department and watching people work.

2. CHANGE YOUR FOCUS. For a fresh view of a business problem, Gregg Levoy, author of *Callings: Finding and Following an Authentic Life* (Three Rivers Press, 1998), says to step back and think about a nonwork passion at which you are successful. What does that activity demand? What challenges have you faced, and what have you achieved? Then see if you can find a way to relate that to your current work issue.

3. GET OFF SCRIPT. "Scripted thinking" serves us well 80% to 90% of the time, says Dennis Heindl. For the rest of the time, he advocates what he calls "hard thinking." Scripted thinking is like being on autopilot; hard thinking is like flying through a storm, says Heindl, who was an IT manager for the Bell System for years and is now president of Greendale, Wis.-based Nth Degree Software Inc. It's the kind of thinking used in goal setting, making tough decisions and being innovative.

To help facilitate hard thinking, Heindl has come up with exercises he calls "thinklets" (see below). "They alter scripted thinking patterns," he says. "They are designed as small bursts of mental stimuli that can be as simple as one question."

"Thinklets can be viewed as 'thought switches' that activate patterns that are not commonly used, leading to new associations, relationships and ultimately new ways of thinking," Heindl says.

A simple example: Heindl tells of working with an IT manager who couldn't decide between two final candidates for a job. Heindl told him to flip a coin. When the manager saw the outcome, he said, "How about two out of three?" He had already made his decision; he just didn't know it yet.

4. QUESTION ASSUMPTIONS. Peter Stockhausen sharpens his critical thinking with a decision-making tool called sensitivity analysis. It's an exercise that looks at a proposal with the assumption that the actual cost or time will overrun to a certain degree. "It's a way to take a look at what that does to the benefits," says the former CIO of Manpower Inc., who is currently a principal at Wauwatosa, Wis.-based Silver Bullet Consultants LLC.

"How sensitive is the decision to all the parameters that were put into it?" he asks. "Adjust each of those and make them worse by 20%." If the benefits remain, then you probably have a winning idea, he says.

5. SEE YOURSELF AS OTHERS SEE YOU. "There were times when I didn't necessarily understand enough about myself," says Ed Goldman, vice president of enterprise operations at Bethesda, Md.-based Marriott International Inc. He recalls an experience during an MBA course that revealed this and led him to a new way of thinking. After a role-playing exercise, two classmates evaluated Goldman's performance, and their comments surprised him. "It's amazing how your perceptions about what you're like can be changed when you see what somebody else thinks about you," he says.

An everyday way to work on self-knowledge, Levoy suggests, is to keep a personal journal. This may not only help you know yourself better — it may raise red flags about issues before they become crises.

However you choose to stay sharp, don't leave it to chance. Find a tool that works for you and apply it. As Maharishi Mahesh Yogi is said to have counseled, "Whatever we put our attention on will grow stronger in our life." ▸

Shea is a freelance writer in Bayside, Wis. Contact him at garytshea@att.net.

More 'Thinklets'

Here are some "thinklets" from Silver Bullet Consultants principal Dennis Heindl to help keep your mind limber.

PERSONAL VISIONING: Consider the problem, project or idea. In five minutes, writing as quickly as you can, answer questions like, "What do I want to do?" and "What will this be like when it is done?" No pauses! This technique brings information from the subconscious to the surface.

TAP YOUR SUBCONSCIOUS: Plant a request to your subconscious; then go to lunch, take a walk or get a good night's sleep. Later, check back for a response.

REVERSE THINKING: Start your analysis from another direction. A famous example: Instead of asking, "How can we get our workers to the material?" Henry Ford asked, "How can we get the materials to our workers?"

OTHER VIEWPOINTS: Find other perspectives on an issue or project, such as fresh eyes, unbiased eyes or future eyes.

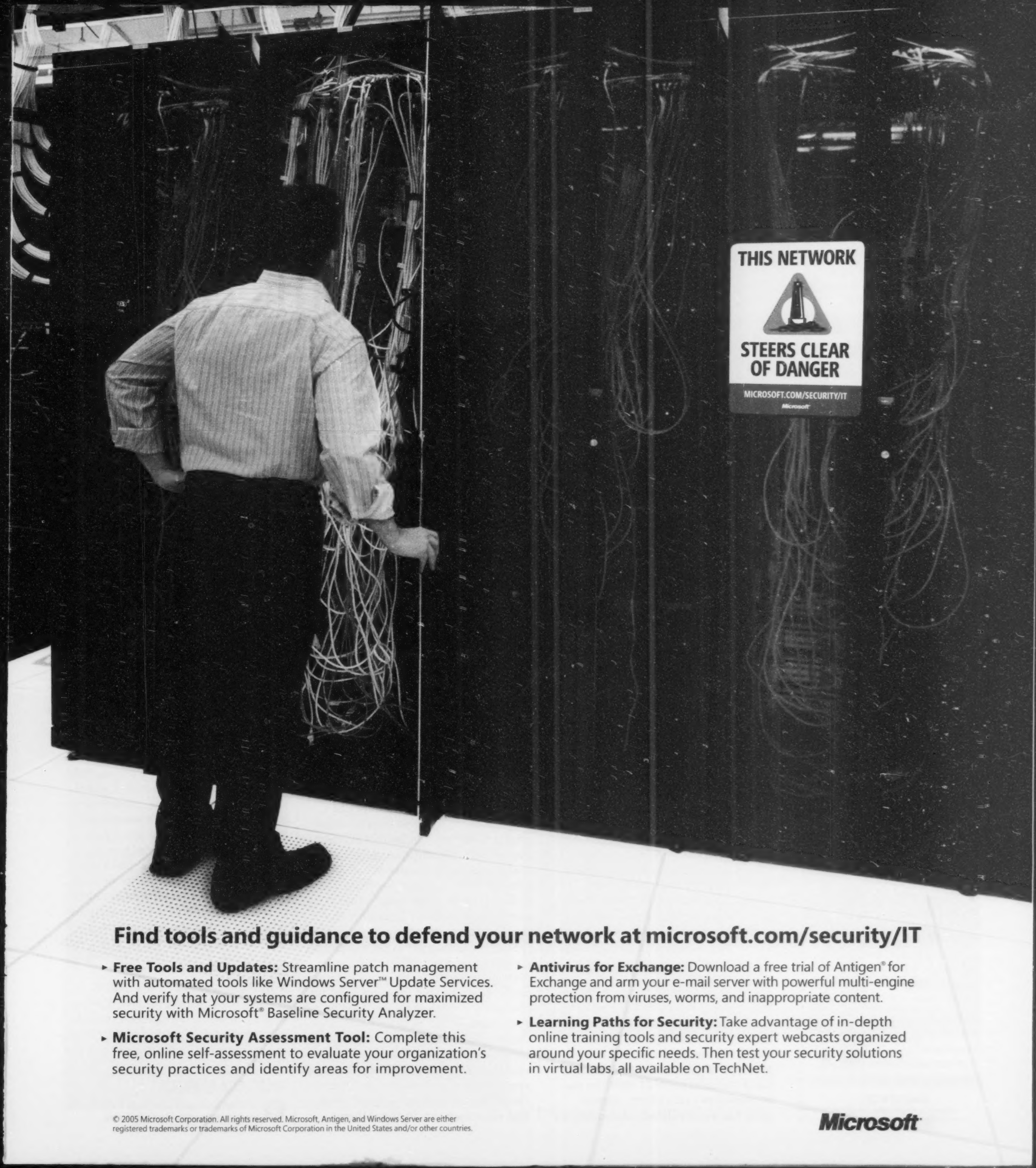
ATTRIBUTE BRAINSTORMING: Get down to basics: size, weight, color, duration, strength. This is useful for product improvements and can also lead to other kinds of insights.

HIGH-PERFORMANCE VIEW: Have you ever been "in the groove," where everything is humming along and the productivity is high? What did it take? Think of how to create an environment that supports it.

SWOT: Identify strengths, weaknesses, opportunities and threats related to the problem, project or idea. This is a very useful technique in strategic planning sessions.

JUST START: Do something. The smallest task, like picking up the phone or even looking up a phone number, can often get the mental wheels turning.

– GARY SHEA



Find tools and guidance to defend your network at microsoft.com/security/IT

- **Free Tools and Updates:** Streamline patch management with automated tools like Windows Server™ Update Services. And verify that your systems are configured for maximized security with Microsoft® Baseline Security Analyzer.
- **Microsoft Security Assessment Tool:** Complete this free, online self-assessment to evaluate your organization's security practices and identify areas for improvement.
- **Antivirus for Exchange:** Download a free trial of Antigen® for Exchange and arm your e-mail server with powerful multi-engine protection from viruses, worms, and inappropriate content.
- **Learning Paths for Security:** Take advantage of in-depth online training tools and security expert webcasts organized around your specific needs. Then test your security solutions in virtual labs, all available on TechNet.

© 2005 Microsoft Corporation. All rights reserved. Microsoft, Antigen, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Microsoft

QUICK HITS

CIO Priorities For 2006

To what extent will each of the following affect your enterprise in 2006?

TREND	2006 RANK	2005 RANK
Improving business processes	1	1
Controlling operational costs	2	3
Attracting/retaining/growing customer relationships	3	*
Supporting competitive advantage	4	4
Improving bottom-line profitability	5	*
Expanding the use of information in products and services	6	7
Security breaches and disruptions	7	2
Need for revenue growth	8	6
Faster innovation	9	10
Data protection/privacy	10	5

*NEW QUESTION IN 2006

To what extent will each of the following be a priority for you in 2006?

ACTION	2006 RANK	2005 RANK
Delivering products that enable business growth	1	1
Linking business and IT strategies	2	2
Building business skills in IT	3	9
Demonstrating the business value of IT	4	3
Attracting/developing/retaining IT personnel	5	*
Applying metrics to the IT organization and services	6	4
Improving the quality of IT services	7	7
Achieving a flexible IT infrastructure	8	*
Improving IT governance	9	10
Consolidating IT organization and operations	10	8

*NEW QUESTION IN 2006

Base: 1,400 CIOs

SOURCE: 2006 GARTNER EXP SURVEY (CONDUCTED SEPTEMBER-DECEMBER 2005)

BARBARA GOMOLSKI

Global IT: Are You Up to the Challenge?

CIOs across the U.S. will tell you that one of their top priorities today is helping their companies take advantage of the improving economy. Specifically, business executives are all aflutter about the huge opportunities in emerging markets such as Asia and, specifically, China.

BARBARA GOMOLSKI, a former *Computerworld* reporter, is a vice president at Gartner Inc., where she focuses on IT financial management. Contact her at **barbgomolski@yahoo.com**.

I, too, am excited about the opportunities of a global economy, but I'm also concerned that executives are in danger of woefully underestimating what it takes to build a truly global IT presence. Consider the following examples:

- A multibillion-dollar consumer packaged goods firm has standardized on SAP for ERP, but because of a lack of consistency in business processes across the organization, it has been unable to implement a single instance outside the U.S. As a result, it is not getting the maximum value out of this significant IT investment.
- Google recently announced that it will set up a new site for the Chinese market. It will censor itself to satisfy Chinese government authorities.
- A CIO at a manufacturing firm laments that countries outside of the U.S. have pushed back on some corporate technology standards, claiming that these technologies are too costly for emerging markets.

I could go on, but you get the point: Doing global IT is a lot harder than it looks. Today, I run into lots of CIOs at companies that operate around the world, but almost none has a truly global IT organization. Almost none has a standard set of IT services that is consistent everywhere. Almost none has a centralized mechanism for managing risk, compliance and regulatory matters. Almost none has an enterprise architecture that stretches across continents. Almost none has a central resource-management capability that allows human capital to be managed and leveraged optimally across the globe.

Will IT ever be global? One could argue that IT will never be centrally managed around the world. Language and currency issues mean some applications may have to be swapped out in unsupported geographies. The unavailability of infrastructure will also impede some efforts to deploy standard technology everywhere. Finally, some might argue that it's not desirable to run a global IT function from a central location. The cultural issues alone suggest that it may be best to keep IT closer to the local business units.

Still, the notion of having a CIO (and a supporting group of IT professionals) on every continent seems to be a model that's headed for extinction. It's too costly — both in terms of well-paid professionals and in terms of the duplication and conflicts that it causes. So, let's assume that establishing a fairly centralized, global model is what large organizations will want to do. Here are the issues they are going to confront and what they can do about them:

The battle for control. If you are in a multinational company that currently has several CIOs (or a country-specific IT function), who is best positioned to lead your IT organization? Usually, the CIO at headquarters has a big advantage politically, but he isn't always the right choice.

Once the leadership is decided upon, however, there will still be IT people in far-flung places, and these people may not be highly motivated to support the global CIO. It's essential that performance metrics be closely linked to cooperation with global IT management, or else there's a good chance that cooperation won't happen.

Technology challenges. As I mentioned above, there will always be exceptions to global technology standards. To the extent that the organization can standardize its core systems, however, it will move a long way toward a global model.

The cultural issues. We all know that working with individuals from other cultures is a challenge. These issues are magnified when there are multiple locations involved. Selecting a global IT leader who is a strong communicator is a must. Choosing someone who has worked in several areas of the world would also be advantageous.

The geopolitical issues. As the Google example illustrates, there are myriad issues that will affect the deployment of technology globally. Organizations will need to develop a competency within IT to evaluate the risks and opportunities of expanding into certain geographies.

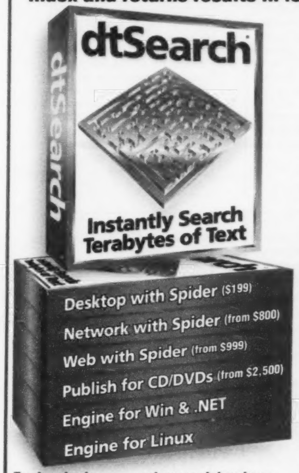
Building a global IT function is fraught with challenges. It will be essential, however, if organizations expect to capitalize on the wealth of business opportunities around the world. ▸

WANT OUR OPINION?

For more columns and links to our archives go to: **www.computerworld.com/columns**

dtSearch® Terabyte Indexer

"Bottom line: dtSearch manages a terabyte of text in a single index and returns results in less than a second" — *InfoWorld*


dtSearch
dtSearch
Instantly Search Terabytes of Text
Desktop with Spider ($199)
Network with Spider (from $800)
Web with Spider (from $999)
Publish for CD/DVDs (from $2,500)
Engine for Win & .NET
Engine for Linux

◆ over two dozen indexed, unindexed, fielded data and full-text search options

◆ highlights hits in HTML, XML and PDF, while displaying links, formatting and images

◆ converts other file types (word processor, database, spreadsheet, email & attachments, ZIP, Unicode, etc.) to HTML for display with highlighted hits

◆ Spider supports static and dynamic Web content, with WYSWYG hit-highlighting

◆ optional API for C++, .NET, Java, SQL, etc. Ask about new .NET Spider API

Developer Quotes and Reviews

dtSearch vs. the competition: **"dtSearch easily overpowered the document indexing and searching abilities of other solutions, especially against large volumes of documents"**

Reliability: **"dtSearch got the highest marks from our systems engineering folks that I've ever heard of"**

Results: **"customer response has been phenomenal"**

"The most powerful document search tool on the market" — *Wired Magazine*

"dtSearch ... leads the market" — *Network Computing*

"Blindingly fast" — *Computer Forensics: Incident Response Essentials*

"A powerful arsenal of search tools" — *The New York Times*

"Super fast, super-reliable" — *The Wall Street Journal*

"Covers all data sources ... powerful Web-based engines" — *eWEEK*

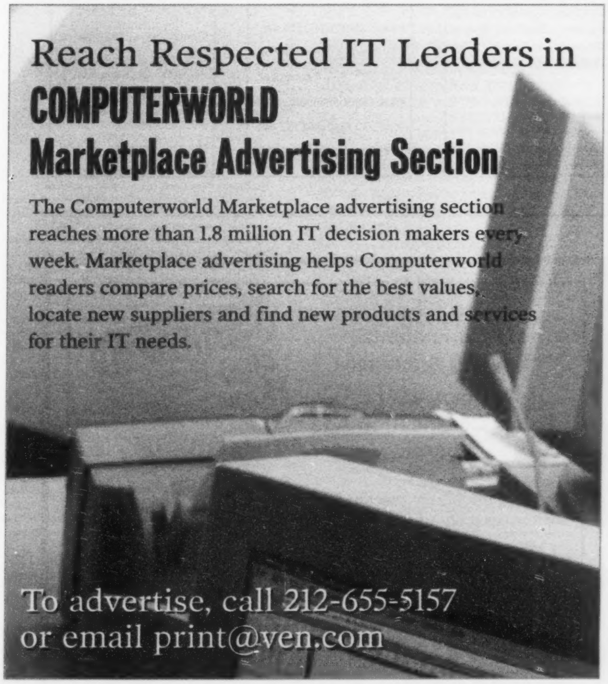
"Searches at blazing speeds" — *Computer Reseller News Test Center*

For hundreds more reviews and developer case studies, see www.dtsearch.com

Contact dtSearch for fully-functional evaluations

The Smart Choice for Text Retrieval® since 1991

1-800-IT-FINDS • www.dtsearch.com



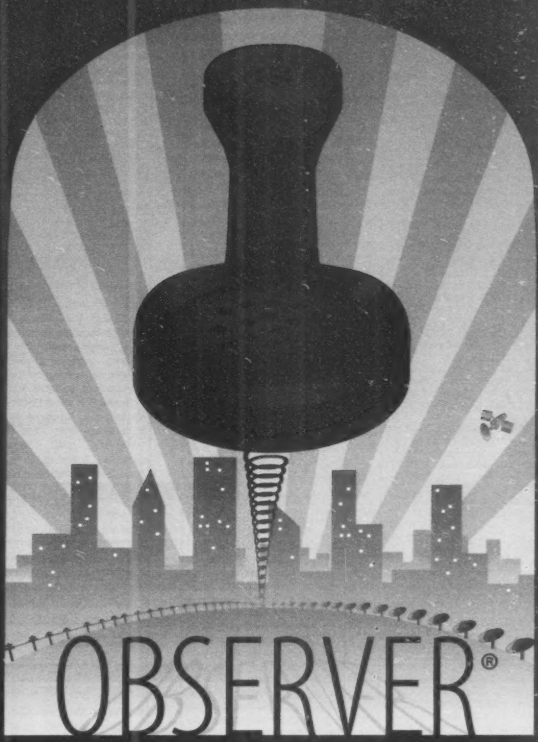
Reach Respected IT Leaders in

COMPUTERWORLD

Marketplace Advertising Section

The Computerworld Marketplace advertising section reaches more than 1.8 million IT decision makers every week. Marketplace advertising helps Computerworld readers compare prices, search for the best values, locate new suppliers and find new products and services for their IT needs.

To advertise, call 212-655-5157
or email print@ven.com



a new era of VoIP analysis

You convinced management to deploy VoIP.

Now ensure that it will run smoothly.

Rely on Network Instruments' Observer to help keep VoIP communications running at optimal performance.

Learn more.
1-800-566-0919
networkinstruments.com/voip

NETWORK® INSTRUMENTS

©2006 Network Instruments, LLC. All rights reserved. Network Instruments, Observer, and all associated logos are trademarks or registered trademarks of Network Instruments, LLC.

Zeninfotech is looking for computer professionals (multiple openings) having Masters/ Bach-elors or equivalent in CS, MIS, CIS, Math, Tech, Bus, Engin-eering (any field), or related. Must have experience in any of the following skills sets: 1. Oracle, Oracle Financial Ap-plication including modules such as AP, AR, FA, PA, and TL, C++, Java, Visual Basic, ASP, VB-.NET, Mercury Test Automation Tools, Unix and Windows NT/ 2000. MS/Equivalent & exp in above skills, refer AVA-SAI106. 2. Oracle, Sybase, SQL Server, Test Director, Win Runner, See-beyond, RequisitePro, Rational Test Manager, Toad, J2EE, RMI, Shell Scripts, C++, Unix and Windows NT/2000. MS/Equiva-lent & exp in above skills, refer PREM-GAND107. 3. J2EE, MVC, OOAD Method-ology, Web Sphere, Web Logic, Tomcat, Oracle Web Application Server, Oracle, Sybase, DB2, and Vignette Content Suite, TCL, Visual Cafe, MQ Series, Sun Solaris and Windows NT/ 2000. MS/Equivalent W/2yrs exp, refer CHAL-GUN108. 4. J2EE, MVC, OOAD Method-ology, SOAP, Web Logic, Tom-cat, Oracle, SQL Server, ASP-.Net, ADO.Net, VS.Net, C#, Rational Rose, VSS, Unix, and Windows NT/2000. MS/Equiva-lent W/1yr exp, refer VAT-MALA109 5. People Soft HRMS, Oracle, Siebel, Sybase, DB2, Weblogic, ISS, WebSphere, Test Director, Win Runner, Load Runner, Java, ASP, EJB, VB Script, Unix, and Windows NT/2000. MS / Equiva-lent W/1yr exp, refer DEVI-SRI112 6. J2EE Framework, Oracle, SQL, C, Lisp, Test Director, Win Runner, Load Runner, Respon-sys, Marketfirst, EJB, JSP, and Windows NT/2000. MS/Equiva-lent & exp in above skills, refer SUB-RAMI110. 7. Oracle, SQL Server, J2EE, C++, Apache, Web Logic, Web Sphere, VSS, JBuilder, Kawa, VSS, XML, Unix, and Windows NT/2000. MS/Equivalent & exp in above skills, refer LADI-SRI114 8. Oracle, TOAD, SQL Server, VS.Net, VB.Net, ASP.Net, C#, J2EE, Developer6i, Erwin, Crys-tal Reports, ODBC, C++, and Windows 2000/XP. MS/Equiva-lent with 1 yr exp in above skills, refer KAND-SUR115. Will provide a competitive salary and benefits. Send Resume to Zeninfotech, 5800 Mill Brook, Suite A, Shawnee, KS 66218 or email to resumes@zeninfotech.com.

Synerzy Software Solutions Inc., needs Sr Software Engr with the following skills in Base SAS, SAS STAT, SAS/GRAPH, SAS/ACCESS, SAS/CONNECT, SAS/ETL, SAS/IntrNET, SAS/Enterprise Miner, SQL, ORACLE, PC environment, Unix, Mainframe environment. MS in CS or Equaling Degree plus 1-2 yrs exp req'd depending upon the position. For some positions we also accept any suitable comb. of education, training & exp. Travel and/or relocation required. Send resume & salary req. to HR Manager, Synerzy Software Solutions Inc, 1 Austin Ave, 2nd Floor, Iselin, NJ 08830

PROGRAMMER ANALYST II Mine Safety Appliances Company in Pittsburgh, PA seeks a Programmer Analyst II to be resp. for the installation, operation & maintenance of co's proprietary SAP-based software program. Five yrs exp. in position offered or as Programmer reqd. Must have exp. w/SAP R/3, ABAP/4, SAP Script, business application program interfaces, remote function calls & User Exits. Must know (through academic training or work exp.) European data transfer to ensure compliance w/Data Protection Acts. Please visit our website at www.msanet.com to apply.

Senior Software Developer Develop enterprise scale applications using JAVA Framework Objects/API. Perform product design, bug verification & beta support in Java 2 Enterprise Edition environment using Unified Modeling Language (UML), Enterprise JavaBeans (EJBs), Java, JDBC, RMI, Java Servlets, Java Server Pages (JSP), JavaScript, HTML, DHTML, XML, Oracle/SQL. Develop Business components using design patterns. Conduct systems analysis & product development throughout full development life cycle using Object oriented analysis & design (OOAD). Work extensively with XML (DTD's & schema's), transform, map & translate data from different systems, code, document, & unit test. M.S. in Computer Science & 6 mos. exp. in above position or 6 mos. exp. in Java Framework Objects/API, UML, EJBs, Java, JDBC, Java Servlets, JSP, JavaScript, HTML, DHTML, XML, Oracle/SQL, OOAD. 40 hrs/wk, 9-5. Resume to: Mr. Vichael Fleming, Sr. VP of Engineering, EPL Inc., 22 Inverness Center Parkway, Suite 400, Birmingham, AL 35242

Software Engineer needed w/Masters or Foreign Equiv. in Engg. or Comp. Sci. or Math & 1 yr exp. *Will accept Bach deg or foreign equiv. in Engg. or Comp. Sci. or Math & 5 yrs of progressive work exp in lieu of Masters or Foreign Equiv. & 1 yr exp to dsgn & write s/ware for operation on proprietary embedded processor systm for monitoring mobile & fixed assets, globally using C, C++, Assembler for TI MSP 430, Atmel AVR, Intel 80188 microcontrollers, Pascal, Borland C, Turbo Pascal, Delphi, VB, D+, Orbcomm, Motorola RF backbone, Transcore, GSM packets, GPS Technology & radio frequency n/works. Plan & prep tech'l reports & instructional manuals. Exp as Prgm Mgr Embedded Systms or Embedded Systms Engr is acceptable. Mail resumes to: Startrak LLC, 106 American Rd., Morris Plains, NJ 07950. Job loc: Morris Plains, NJ

Acme Packet, Inc. seeks a SYSTEMS ENGINEER at its Burlington, MA location. Travel to customer locations to consult with customers on creating and executing test plans for their specific Acme Packet network deployments. Advise customers about and perform maintenance of software systems. Configure and troubleshoot customer systems on-site and provide follow-up support for open issues. Work with Technical Support team to transfer knowledge of customer's configuration and network topology. Minimum Requirements: Master's degree in Computer Science or Telecommunications Systems Management or equivalent, plus technical knowledge of the following: Data networking and telephony environments with an emphasis on Next Generation IP services and IP Telephony Architectures & VoIP protocols (SIP, H.323, MGCP, RTP/RTCP). Please mail resumes with cover letters to: Andre Normand, Acme Packet, Inc., 71 Third Avenue, Burlington, MA 01803.

Thomson, Inc. is seeking a Test Engineer for its Salt Lake City, UT location to establish test methods, test fixture design and PCA boundary scan test (IEEE 1149.x) implementation into the Router and Maestro product line. Must have a Master of Science degree or equivalent in Engineering Technology or related field plus two years of experience in the related occupation of R&D hardware test engineer. Experience may have been gained prior to completion of Master's degree. Salary commensurate with experience. Send cover letter and resume to Thomson, Inc., Attn: HR - Job # 9022, 10330 North Meridian Street, Indianapolis, IN 46290-1976.

Software Developer I – Business Tier

Perform product design, bug verification & beta support in J2EE environment using Java, JDBC, EJB, RMI, SQL & UML. Develop business components using design patterns. Conduct systems analysis & product development throughout the full development life cycle. B.S. in Computer Science, or Electronics Engineering. Must have the ability to use Java, JDBC, EJB, RMI, SQL, UML & design patterns. 40hrs/week, 9am-5pm. Positions available: multiple. Resume to: Mr. Vichael Fleming, Sr. VP of Engineering, EPL Inc., 22 Inverness Center Parkway, Suite 400, Birmingham, AL 35242.

Senior Database Administrator - For logical and physical DB design in both Oracle and IDMS database systems. Includes maintenance, monitoring, troubleshooting, recovery, development, and training. Refer to job #DBA106 and reply to jobs@informatixinc.com or to Informatix, Inc., 1740 Creekside Oaks Dr. #175, Sacramento, CA 95833.

BUSINESS ANALYST - EMERGING INFORMATION TECHNOLOGIES

Position avail. with Idea Foundry, Inc. in Pittsburgh, PA. Resp. for analysis, development & modification of client technology products & systems to assist high tech. clients in developing competitive IT products & solutions. Req.: Masters in Info. Systems Mgmt., Business Admin. or related field & 2 yrs exp. in job offered or in information technology industry. Must be exp. w/computer systems needs assessment, client consultation & project mgmt. of small to large teams. Must be exp. w/building models for decision analysis, financial modeling, market sizing & forecasting. Must be exp. w/Advanced Excel, Visio, Distributed Technologies (J2EE & RMI), Database Applications (Oracle, Access & SQL) & Project Management Software (MS Project). Must be willing to relocate. Light travel req. Ref. # IF4551-06 Responses to: Idea Foundry Inc. mbguzzetta@ideafoundry.org

---

BUSINESS ANALYST Cyber Technology Group (Iselin, NJ) seeks business analysts to utilize knowledge of corporate functions to design, develop, and implement web and client/server applications in the area of business information systems. Design and develop detailed functional systems by using structured design methodologies. Gather business requirements. Conduct business analysis using WebSphere, WebLogic, Power Builder, Unix and Oracle. Charles River application knowledge is essential. Competitive salary. Please apply with 2 copies of resume to HRD, Cyber Technology Group, 200 Middlesex Essex Turnpike, Suite 100, Iselin, New Jersey 08830.

Programmer Analysts (P/A) & Software Engineers (S/E) for Fremont, CA. P/A: Design & Develop software using Oracle, PL/SQL, Designer 2000, Developer 2000, Erwin, Sybase, XML, Plumtree, PVCS, UNIX. Bachelors or Eqv. req'd in Computers, Eng, Math or related field +2 yrs of related exp. S/E: Design, develop & test software using Java, C, C++, Oracle, VB, Tuxedo, Clear Case, Eclipse, Corba, RMI, RUP.; Masters or Eqv.** req'd in Computers, Eng, math or related field of study + 1 yr of related exp. (**Eqv: Bachelors or Eqv + 5 yrs of progressive related work exp.).40 hrs/Wk. Must have legal authority to work permanently in the U.S. Send resume to HR, Globalways, Inc., 42808 Christy St Suite 100 Fremont, CA 94538

Software Engineer: Design & develop Web Application using ASP.net, Web Services & Implement Orchestration. Utilize VB/C#.net, ASP.NET, Design Patterns, UML, Sql Server, Oracle, Crystal Reports, BizTalk Server, Nunit. Need MS in Comp. Science or Engg. & 1 yr of exp or BS in Comp. Science or Engg. & 5+ yrs of progressive exp. Send resume to: HR., Wysitech, Inc. 5335 Far Hills Ave., Ste 211, Dayton, OH 45429

Recruiting Manager needed w/Masters in Mgmt of Technology or Info Systms Mgmt & 1yr exp to analyze, identify & qualify info technology for fin'l service & insurance industries for optimal performances to ensure maximum profitability. Gather info from users to dsgn & implmt effective solutions by creating business plans & functional specs. Formulate, execute & outsource business strategy for IT & HR functions. Recruit & interview qualified candidates as per client needs. 1yr exp as Technical Recruiter is acceptable. Exp prior to completion of Masters deg is acceptable. Mail res to: STG, Inc., 910 Bergen Ave., Ste #202, Jersey City, NJ 07306. Job loc: Jersey City, NJ

Computer Software Engineer sought by Alphatrac, Inc. in Westminster, CO to develop a real-time GIS-based atmospheric modeling system for an MS Windows-based implementation using ESRI-based (ArcView) approaches to the GIS. Requires master's in Electronics Engineering or related field, 4 yrs exp. in the job offered or as a Systems Analyst, and working knowledge of DES, Triple DES & RSA, C & C++ for UNIX & Windows, C#, Visual Basic, SQL Server & Microsoft Access. To apply mail resume to Christine Bennett, Alphatrac, Inc., Sheridan Park 8, 8670 Wolff Court, Westminster, CO 80031.

System & Network Administrator:

Intermedia.Net, Inc. headquarters NY, job site: Sunnyvale, CA. B.S + 2 yrs exp. e-mail controller sajobca@intermedia.net or mail 150 Mathilda Pl., Ste. 104, Sunnyvale, CA 94086

Thomson, Inc. is seeking a Layout Engineer, Member Technical Staff 1 to perform signal integrity, parasitic extraction and power analysis on standard cell IC layouts pursuant to design rules. Must have a Master's degree or equivalent in electrical engineering or related field plus at least 6 months of experience in the related occupation of extraction and design of interconnect circuits. Experience may have been gained prior to completion of Master's degree. Salary commensurate with experience. Send cover letter and resume to Thomson, Inc., Attn: HR - Job # 9019, 10330 North Meridian Street, Indianapolis, IN 46290-1976.

Programmer Analysts for Dallas ,TX: Design, Develop software using Oracle, Erwin, XML, C++, Interwoven, Coolgen, ClearCase, ClearQuest, PVCS, UNIX; Bachelors or Eqv. req'd in Computers, Eng, Math or any related field of study + 2 yrs of related exp. Software Engineers for Dallas, TX: Design, develop & test software using Java, C, C++, RUP, VB, Winrunner, Tuxedo, RMI, Corba. Masters or Eqv** req'd in Computers, Eng, Math or related field of study + 1 yr of related exp. (**Eqv.: Bachelors or Eqv. + 5 yrs of progressive related work exp). 40 hrs/Wk. Must have legal authority to work permanently in the U.S. Send resume to HR, Redsalsa Technologies, Inc., 13800 Montfort Dr, Ste.230, Dallas, TX 75240.

Software Engineer.

Send resume to Mandy Fleming, Hyland Software, 28500 Clemens Rd., Westlake, OH 44145.

Must ref job code AX 4-06.

Law Firms
IT Consultants
Staffing Agencies

Place your
Labor Certification Ads
here!

Are you frequently placing legal or immigration advertisements?

Let us help you put together a cost effective program that will make this time-consuming task a little easier.

COMPUTERWORLD
After the Hype
Server Rivals Try to Rescue InfiniBand I/O Technology

Contact us at:
IT careers
800.762.2977
COMPUTERWORLD

COMPUTERWORLD HEADQUARTERS

One Speen Street, P.O. Box 9171
Framingham, MA 01701-9171
Phone: (508) 879-0700
Fax: (508) 875-4394

PRESIDENT/PUBLISHER/CEO
Matthew J. Sweeney
(508) 271-7100

EXECUTIVE ASSISTANT TO CEO/ CORPORATE COMMUNICATIONS MANAGER
Laureen Austermann
(508) 820-8522

VICE PRESIDENT/ GENERAL MANAGER ONLINE
Martha Connors
(508) 620-7700

VICE PRESIDENT/MARKETING
Matt Duffy
(508) 820-8145

DIRECTOR/ HUMAN RESOURCES
Julie Lynch
(508) 820-8162

EXECUTIVE VICE PRESIDENT/ STRATEGIC PROGRAMS
Ronald L. Milton
(508) 820-8661

VICE PRESIDENT/ONLINE SALES
Gregg Pinsky
(508) 271-8013

EXECUTIVE VICE PRESIDENT/COO
Matthew C. Smith
(508) 820-8102

VICE PRESIDENT/ EDITOR IN CHIEF
Don Tennant
(508) 620-7714

VICE PRESIDENT/CIRCULATION
Debbie Winders
(508) 820-8193

CIRCULATION

Sr. Circulation Specialist/Diana Turco, (508) 820-8167

PRODUCTION

Vice President Production/Carolyn Medeiros; Production Manager/Kim Pennett; Print Display Advertising: (508) 820-8232, Fax: (508) 879-0446; DISTRIBUTION: Director of Distribution and Postal Affairs/Bob Wescott

STRATEGIC PROGRAMS AND EVENTS

Vice President Strategic Initiatives/Leo Leger; Vice President Business Development/John Amato; Senior Director, Event Sponsorship Sales/Ann Harris; Vice President, Event Marketing and Conference Programs/Derek Hulitzky; Director, Event Management/Michael Meleedy; Program Director, Computerworld Honors/Sandy Weill; Business Development Specialist/Colin Longval; Business Development Specialist/Chris Leger; Business Development Specialist/Amy McLellan; Marketing Manager/Timothy Johnson; Conference Manager/Nancy Felsheim; Sr. Marketing Specialist/Duncan Newell; Executive Programs Specialist-Computerworld Honors/Deborah Lee; Executive Programs Specialist-Executive Assistant/ Kelly McGill; Custom Events Specialist/Jean Lee; Operations Specialist/Chris Johnson; Web Development Specialist/Michelle Remeny; Customer Service Coordinator/Josh Ryan;Audience Development Coordinator/Shari Ebb, One Speen Street, Box 9171, Framingham, MA 01701-9171, (508) 879-0700, Fax: (508) 626-8524

ONLINE ADVERTISING

Director of Online Sales/Sean Weglage, (415) 978-3314, Fax: (415) 543-8010; Online Sales Manager, East Coast/James Kalbach, (610) 971-1588; Online Account Executive/April Hughes, (415) 978-3311, Fax: (415) 543-8010; Online Account Executive/Matthew Wintringham, (508) 270-3882, Fax: (508) 270-3882; Senior Account Services Manager/Bill Rigby, (508) 820-8111, Fax: (508) 270-3882; Online Account Services Specialist/Kathryn Goryl, (508) 620-7760, Fax: (508) 270-3882, Online Sales Assistant/Kathy Snow (508) 270-7112; One Speen Street, Box 9171, Framingham, MA 01701-9171, Fax: (508) 270-3882

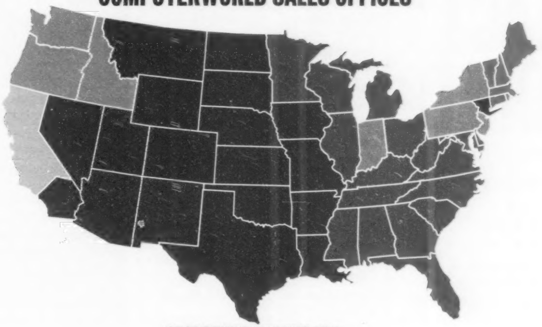
IT CAREERS ADVERTISING SALES OFFICE

Director of Sales/Laura Wilkinson, (847) 441-8877, Fax: (847) 441-8878; One Speen Street, Framingham, MA 01701

LIST RENTAL

POSTAL: Rich Green, (508) 370-0832, e-mail: rgreen@idglist.com. E-Mail: Christine Cahill, (508) 370-0808, e-mail: ccahill@idglist.com. MAILING ADDRESS: IDG List Services, P.O. Box 9151, Framingham, MA 01701-9151, Fax: (508) 370-0020

COMPUTERWORLD SALES OFFICES



PRESIDENT/PUBLISHER/CEO
Matthew J. Sweeney
(508) 271-7100
Fax: (508) 270-3882

SALES INTEGRATION DIRECTOR
Laurie Marinone
(508) 628-4823
Fax: (508) 270-3882

NORTHWESTERN STATES

ACCOUNT DIRECTOR: Jim Barrett (415) 978-3306, ACCOUNT EXECUTIVE: Chris Da Rosa (415) 978-3304, 501 Second Street, Suite 114, San Francisco, CA 94107, Fax: (415) 543-8010

BAY AREA

ACCOUNT DIRECTORS: Jim Barrett (415) 978-3306, Sara Culley (415) 978-3307; ACCOUNT EXECUTIVES: Chris Da Rosa (415) 978-3304, Emmie Hung (415) 978-3308, 501 Second Street, Suite 114, San Francisco, CA 94107, Fax: (415) 543-8010

SOUTHWESTERN STATES

ACCOUNT DIRECTOR: Bill Hanck (949) 442-4006; ACCOUNT EXECUTIVE: Jean Dellarobba (949) 442-4053, 19200 Von Karman Avenue, Suite 360, Irvine, CA 92612, Fax: (949) 476-8724

EASTERN CENTRAL STATES/ INDIANA

ACCOUNT DIRECTOR: Peter Mayer (201) 634-2324; ACCOUNT EXECUTIVE: John Radzniak (201) 634-2323, 650 From Road - 2nd Floor, Paramus, NJ 07652, Fax: (201) 634-9289

CENTRAL STATES

ACCOUNT DIRECTOR: Bill Hanck (949) 442-4006; ACCOUNT EXECUTIVE: Jean Dellarobba (949) 442-4053, 19200 Von Karman Avenue, Suite 360, Irvine, CA 92612, Fax: (949) 476-8724

NEW ENGLAND STATES

ACCOUNT MANAGER: Deborah Crimmings (508) 271-7110; SALES ASSOCIATE: Jess Roman (508) 271-7108, One Speen Street, Framingham, MA 01701, Fax: (508) 270-3882

METRO NEW YORK

ACCOUNT DIRECTOR: Peter Mayer (201) 634-2324; ACCOUNT EXECUTIVE: John Radzniak (201) 634-2323, 650 From Road - 2nd Floor, Paramus, NJ 07652, Fax: (201) 634-9289

SOUTHEASTERN STATES

ACCOUNT DIRECTOR: Lisa Ladle-Wallace (904) 284-4972, 5242 River Park Villas Dr., St. Augustine, FL 32092, Fax: (800) 779-8622; SALES ASSOCIATE: Jess Roman (508) 271-7108, One Speen Street, Framingham, MA 01701, Fax: (508) 270-3882

ADVERTISER'S INDEX

Advanced Micro Devices www.amd.com	43, 45
AT&T www.att.com	24-25
CDW Corporation www.cdw.com	15
DLT IV Class Action Settlement www.TapeDriveSettlement.com	40*
dtSearch www.dtsearch.com	51
EMC www.emc.com	35
Fujitsu Computer Systems Corporation us.fujitsu.com/computers/PRIMEQUEST	17
Global Crossing www.globalcrossing.com	18-19
Hewlett-Packard Enterprise www.hp.com	11
Hewlett-Packard Global TSG www.hp.com	20/21
Hyperion www.hyperion.com/go/leaders	2-3
Insight www.insight.com	9
Intel www.itanium-integrity.com	26
InterSystems Caché www.intersystems.com	13
IT Executive Summit Storage www.itexecutivesummit.com	47
Microsoft Linux microsoft.com/getthefacts	7
Microsoft Security microsoft.com/security/IT	49
Microsoft SQLServer 2005 microsoft.com/bigdata	28-31
Mobile & Wireless World www.mwwusa.com	21
Network Instruments networkinstruments.com/voip	51
Oracle Corp. www.oracle.com	58
Pillar Data Systems www.pillardata.com	4
SonicWALL www.sonicwall.com	37
Sun Microsystems www.sun.com	57

*Regional Select Edition

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

INTERNATIONAL DATA GROUP

CHAIRMAN OF THE BOARD
Patrick J. McGovern

PRESIDENT, IDG COMMUNICATIONS
Bob Carrigan

COMPUTERWORLD is a business unit of IDG, the world's leading technology media, research and event company. IDG publishes more than 300 magazines and newspapers and offers online users the largest network of technology-specific sites around the world through IDG.net (www.idg.net), which comprises more than 330 targeted Web sites in 80 countries. IDG is also a leading producer of 168 computer-related events worldwide, and IDG's research company, IDC, provides global market intelligence and advice through 51 offices in 43 countries. Company information is available at www.idg.com.

IDG

Have a problem with your Computerworld subscription?

We want to solve it to your complete satisfaction, and we want to do it fast.
Please write to: **Computerworld, P.O. Box 3500, Northbrook, IL 60065-3500.**

Your magazine subscription label is a valuable source of information for you and us. You can help us by attaching your magazine label here, or copy your name, address, and coded line as it appears on your label. Send this along with your correspondence.

ADDRESS CHANGES OR OTHER CHANGES TO YOUR SUBSCRIPTION
All address changes, title changes, etc. should be accompanied by your address label, if possible, or by a copy of the information that appears on the label, including the coded line.

YOUR NEW ADDRESS GOES HERE:

ADDRESS SHOWN: ☐ Home ☐ Business

NAME
TITLE COMPANY
ADDRESS
CITY STATE ZIP

NAME
TITLE COMPANY
ADDRESS
CITY

OTHER QUESTIONS AND PROBLEMS
It is better to write us concerning your problem and include the magazine label. Also, address changes are handled more efficiently by mail. However, should you need to reach us quickly, the following toll-free number is available: **(888) 559-7327 Outside U.S. call (847) 559-7322.**
Internet address: cw@omeda.com

COMPUTERWORLD allows advertisers and other companies to use its mailing list for selected offers we feel would be of interest to you. We screen these offers carefully. If you do not want to remain on the promotion list please write to the following address – COMPUTERWORLD, Circulation Department, One Speen Street, Framingham, MA 01701.

HOW TO CONTACT COMPUTERWORLD

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter.

Don Tennant Editor in chief	(508) 620-7714
Mitch Betts Executive editor	(301) 262-8243
Julia King Executive editor, events	(610) 532-7599

DEPARTMENT EDITORS

Craig Stedman News editor	(508) 820-8120
Mike Bucken Assistant News editor	(508) 820-8562
Tommy Peterson Technology editor	(508) 620-7729
Kathleen Melymuka Management editor	(508) 820-8118

REPORTERS

Sharon Fisher Storage; disaster recovery/business continuity	(508) 879-0700
Matt Hamblen Networking; mobile/wireless; network/systems management	(508) 820-8567
Heather Havenstein Business intelligence; application development; Web services; application server software; health care industry	(919) 386-0381
Eric Lai Windows, Linux, desktop applications, databases, financial services industry	(510) 768-2818
Linda Rosencrance General assignment; transportation and automotive industries	(508) 628-4734
Carol Sliwa National correspondent	(508) 628-4731
Marc L. Songini ERP, supply chain and CRM applications; RFID; retail, food and agribusiness industries	(508) 820-8182
Patrick Thibodeau Enterprise systems; Unix; outsourcing and immigration; antitrust issues	(202) 333-2448
Jaikumar Vijayan Corporate security/privacy issues; related legislation and regulations	(630) 978-8390
Todd R. Weiss General assignment; open-source community; intellectual property; messaging/collaboration	(717) 560-5255

FEATURES

Ellen Fanning Special projects editor	(508) 820-8204
Thomas Hoffman National correspondent	(845) 988-9630
Robert L. Mitchell National correspondent	(508) 820-8177
Mark Hall Editor at large	(503) 391-1158
Gary H. Anthes National correspondent	(703) 536-9233
Julia King National correspondent	(610) 532-7599

OPINIONS

Frank Hayes Senior news columnist	(503) 252-0100

COMPUTERWORLD.COM

Martha Connors Vice president/general manager	(508) 620-7700
Scot Finnie Online editorial director	(508) 628-4868
Ian Lamont Senior online projects editor	(508) 820-8187
Gregg Linde Online production manager	(508) 820-8217
Joyce Carpenter Online projects editor	(508) 820-8161
Sharon Machlis Managing editor/online	(508) 820-8231
Ken Mingis Online news editor	(508) 820-8545
Marian Prokop Online editor at large/Networking channel editor	(508) 620-7717
David Ramel E-mail newsletters/Networking channel editor	(508) 820-8269
Lucas Mearian Storage channel editor	(508) 820-8215
Angela Gunn Security channel editor	(206) 388-2508
John R. Brillon Associate art director	(508) 820-8216
Dawn Petersen Production designer	(508) 820-8131
Susan Cahill Associate online production designer	(508) 271-7122
Peter Smith Web development manager	
Kevin Gerich, Mark Savery Web developers	

RESEARCH

Mari Keefe Research manager	
Gussie Wilson Research associate	

COPY DESK

Michele Lee DeFilippo Managing editor/production	(508) 820-8126
Bob Rawson Assistant managing editor/production	(508) 271-8015
Eugene Demaitre, Monica Sambataro Senior copy editors	
Donna Sussman Copy editor	

GRAPHIC DESIGN

Stephanie Faucher Design director	(508) 820-8235
April O'Connor Art director	
Owen Edwards Associate art director	

ADMINISTRATIVE SUPPORT

Linda Gorgone Office manager	(508) 820-8176

CONTRIBUTING EDITOR

Jamie Eckle Opinions	(617) 596-1873

CONTRIBUTING COLUMNISTS

Michael Gartenberg, Paul Glen, Barbara Gomolski, John Halamka, Thornton A. May, David Moschella, Bart Perkins, Virginia Robbins, Bruce A. Stewart

CONTRIBUTING WRITERS

Mary Brandel, Stacy Collett, Russell Kay, Mary K. Pratt, Drew Robb

TELEPHONE/FAX

Main phone number All editors unless otherwise noted below	(508) 879-0700
Main fax number	(508) 875-8931
24-hour news tip line	(508) 620-7716

E-MAIL

- Our Web address is www.computerworld.com.
- Staff members' e-mail follows this form: firstname_lastname@computerworld.com.
- For IDG News Service correspondents: firstname_lastname@idg.com.

LETTERS TO THE EDITOR

Letters to the editor are welcome and should be sent to: letters@computerworld.com. Include your address and telephone number.

MAIL ADDRESS

PO Box 9171, 1 Speen Street,
Framingham, Mass. 01701

SUBSCRIPTIONS/BACK ISSUES

Subscription rates:

- U.S., $99.99/year
- Canada, $130/year
- Central and South America, $250/year
- All others, $295/year

Phone	(888) 559-7327
E-mail	cw@omeda.com
Back issues	(888) 559-7327

REPRINTS/PERMISSIONS

Contact	Erik Eberz
Phone	(717) 399-1900, ext. 150
E-mail	computerworld@reprintbuyer.com

Visit www.reprintbuyer.com to obtain quotes and order reprints online.

COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at **www.computerworld.com**

ACRONIS INC. 39
ADVANCED MICRO DEVICES INC. 14
AGILENT TECHNOLOGIES INC. 32
AMAZON.COM INC. 32
AMBERPOINT INC. 39
AMDOCS LTD. 20
AMERICAN MODERN INSURANCE GROUP INC. 14
ARGENISS 16
ASSOCIATION OF AMERICAN RAILROADS 12
BEA SYSTEMS INC. 14
BELLSOUTH CORP. 16
BMC SOFTWARE INC. 36
BRIGHAM YOUNG UNIVERSITY 6
CA INC. 22
CARAUSTAR INDUSTRIES INC. 42
CAREERBUILDER.COM INC. 46
CISCO SYSTEMS INC. 20
CISCO-LINKSYS LLC 39
COMARCO INC. 55
COMPUTER TASK GROUP INC. 14
COSTELLO & SONS INSURANCE BROKERS INC. 55
COX COMMUNICATIONS INC. 16
DATAPOWER TECHNOLOGY INC. 14
DOUBLE-TAKE SOFTWARE 55
DURR SYSTEMS INC. 6
EARTHLINK INC. 16
EBAY INC. 32
ENTERPRISE APPLICATIONS CONSULTING 6
E-SECURITY INC. 10
EVANS DATA CORP. 8
FBI 16, 56
FIRST CONSULTING GROUP 42
FLASHLINE INC. 12
FLEXTRONICS INTERNATIONAL LTD. 10
FORRESTER RESEARCH INC. 41
FREE STANDARDS GROUP INC. 8
FUTURESTEP INC. 42
GARTNER INC. 20, 32, 50
GEORGIA STATE UNIVERSITY 42
GEORGIA-PACIFIC CORP. 42
GOOGLE INC. 50
HELVETIA PATRIA GROUP 14
HEWLETT-PACKARD CO. 6, 14, 20, 22, 33
HOB ENTERTAINMENT INC. 55
HOUSE OF BLUES 55
HYPERION SOLUTIONS CORP. 6
HYPEROFFICE INC. 10
IBM 6, 8, 10, 12, 14, 22, 32, 34
IDC 12
INDIANA DEPARTMENT OF EDUCATION 8
INFOSYS TECHNOLOGIES LTD. 20
INGERSOLL-RAND CO. 55
INNOBASE OY 55
INTEL CORP. 6, 14, 16, 33
IONA TECHNOLOGIES INC. 39
JBOSS INC. 22
JPMORGAN CHASE & CO. 12
KOHLBERG KRAVIS ROBERTS & CO. 10
KORN/FERRY INTERNATIONAL 42
LENOVO GROUP LTD. 10
LIBRARY OF CONGRESS 48
LIGHTHOUSE GLOBAL TECHNOLOGIES LLC 10
LINSPIRE INC. 8
LOCKDOWN NETWORKS INC. 10
MANPOWER INC. 48
MARRIOTT INTERNATIONAL INC. 48
MCAFEE INC. 36
META GROUP INC. 23,33
MIB GROUP INC. 32-3
MICHIGAN COUNCIL OF WOMEN IN TECHNOLOGY 46
MICRO FOCUS INTERNATIONAL PLC 32
MICROSOFT CORP. 14, 22, 38, 48
MYSQL AB 1, 32
NATIONAL ASSOCIATION OF SOFTWARE AND SERVICE COMPANIES 20
NETGEAR INC. 39
NETUITIVE INC. 10
NEW HAMPSHIRE DIVISION OF MOTOR VEHICLES 16
NEW HAMPSHIRE LIQUOR COMMISSION 16
NEW HAMPSHIRE OFFICE OF INFORMATION TECHNOLOGY 16, 56
NEW HAMPSHIRE VETERANS HOME 16
NEW YORK DEPARTMENT OF MOTOR VEHICLES 8
NEW YORK STATE BOARD OF ELECTIONS 8
NOKIA CORP. 20
NORTEL NETWORKS LTD. 36
NORTH BAY BANCORP 22
NOVELL INC. 6, 8, 10, 22
NTH DEGREE SOFTWARE INC. 48
ORACLE CORP. 1, 6, 10, 16, 22, 36
OVUM LTD. 32-33
PUBLICIS GROUP SA 33
QPASS INC. 20
QUEST INTERNATIONAL USERS GROUP 6
RAILINC CORP. 1
RAIZLABS CORP. 8
RED HAT INC. 6, 8, 22
REUTERS GROUP PLC 22
RITZ CAMERA CENTERS INC. 8
ROBERT HALF INTERNATIONAL 46
ROBERT HALF TECHNOLOGY 46
SABRE HOLDINGS CORP. 27
SANS INSTITUTE 8
SAP AG 50
SILVER BULLET CONSULTING LLC 48
SLASHDOT.ORG 22
SOFTPEDIA 22
SOLID INFORMATION TECHNOLOGY INC. 55
SOPHOS PLC. 8
SOURCELABS INC. 8
SPECIALTY SALES AND MARKETING INC. 6
SSA GLOBAL TECHNOLOGIES INC. 55
STANFORD UNIVERSITY 48
STELLENT INC. 39
SUN MICROSOFT INC. 22
SUSE LINUX AG 22
TATA CONSULTANCY SERVICES LTD. 20
TATUM LLC 42
THE BANK OF NEW YORK CO. 32
THE COMPUTING TECHNOLOGY INDUSTRY ASSOCIATION INC. 41, 46
T-MOBILE INTERNATIONAL AG 14
TRAVELOCITY.COM LP 32
TROPOS NETWORKS INC. 16
U.S. DEPARTMENT OF JUSTICE 8, 14, 16
U.S. GEOLOGICAL SURVEY 55
U.S. SOCIAL SECURITY ADMINISTRATION 8
UNISYS CORP. 14
UNIVERSITY HIGH SCHOOL 46
UNIVERSITY OF ROCHESTER 34
UNIVERSITY OF TEXAS M.D. ANDERSON CANCER CENTER 42
UPSTREAM SOFTWARE CORP. 6
VERIZON COMMUNICATIONS INC. 39
VMWARE INC. 33, 38
WACHOVIA CORP. 1
WASHINGTON ALLIANCE OF TECHNOLOGY WORKERS 20
WATCHFIRE CORP. 10
WELLS FARGO BANK 36
WESTELL TECHNOLOGIES INC. 39
WIPRO LTD. 20
YAHOO INC. 55
ZAPTHINK LLC 12, 32

Continued from page 1

MySQL

signed to support "very modern, what some call 'Web 2.0,' types of applications," Mickos said.

MySQL is unusual among database vendors in that it lets users easily switch between underlying storage engines. That's a big plus in the eyes of David Krings, a Web developer at Ingersoll-Rand Co.

Krings currently uses MyISAM, a third-party product that is shipped with MySQL as its default storage engine. But he said he would welcome the availability of more engines.

He added that he values "platform flexibility over ultimate performance" for the databases at Ingersoll-Rand, a Hamilton, Bermuda-based manufacturing conglomerate.

Mickos said MySQL wants to increase the number of available engines in order to boost the appeal of its database to customers that are moving to service-oriented architectures.

"We'll let users switch between a V-4 engine and a V-12 without having to get out of their car," he said.

Currently, the most popular storage engine for MySQL is InnoDB, which was developed by Innobase Oy in Helsinki, Finland. Oracle bought Innobase last October, sparking fears that MySQL users might be cut off from using InnoDB.

Then, in February, Oracle acquired Sleepycat Software Inc., a Lincoln, Mass.-based company that had also developed a storage engine for MySQL.

Earlier this month, Oracle agreed to continue developing InnoDB for MySQL for an undisclosed number of years. Even so, many users are seeking alternatives to InnoDB, according to Mickos, who confirmed reports that he recently turned down a buyout offer from Oracle.

Jeremy Cole, a former MySQL employee who now oversees about 8,000 installations of the open-source database at Yahoo Inc., said the company uses MyISAM for applications that mostly require data reads, and InnoDB in cases where many end users may be writing information to the database simultaneously.

Cole called InnoDB a "great" technology. But he also said it is "somewhat poorly integrated" with MySQL, lacks features such as full-text search and online configuration changes, and has weak support for referential integrity.

"If a new storage engine offered InnoDB's current feature set without those problems and was stable, I would switch in a heartbeat," Cole said. He added, however, that he doesn't expect any new storage engines "to really be ready for use for another year or so."

Solid Information Technology Inc., a Cupertino, Calif.-based maker of embedded and in-memory databases, last week said it is developing an open-source storage engine that will work with MySQL. A prototype is due for release today, and the company said it plans to start beta-testing the software in July. Commercial shipments are expected to begin in the fourth quarter.

At this week's user conference, several other vendors and open-source projects are expected to announce plans to build MySQL storage engines, Mickos said, but he declined to identify the companies.

Like Cole, Boyd Hemphill, a database administrator at the Texas Region XIII Education Service Center in Austin, uses both InnoDB and MyISAM. But Hemphill said he isn't looking to make any changes.

"Unless somebody shows me a storage engine that really blows my socks off," he said, "I've got too much invested in these already to switch." ▸

More Technology

At its user conference this week, MySQL AB also plans to:

- Demonstrate a MySQL 5.1 beta release with new functionality in areas such as business intelligence and high availability.
- Announce enhancements to the MySQL Network that are aimed at helping database administrators at smaller companies.
- Preview MySQL Workbench, an upcoming database design tool with a graphical user interface.

---

100 Years After San Francisco Quake, IT Units Are Prepared

BY SHARON FISHER

The earthquake that destroyed much of San Francisco 100 years ago last week wasn't a one-shot disaster. The U.S. Geological Survey estimates that there's a 62% chance an earthquake similar in scope to the one on April 18, 1906, will hit the San Francisco Bay area during the next 30 years.

And lest Southern Californians get too sanguine, the probability is the same for a similarly strong quake there in the same time span.

With that in mind, IT managers at HOB Entertainment Inc. in Hollywood are discussing whether to replicate the company's data to a remote facility in Quincy, Wash., where it operates an amphitheater complex.

"It's a great location for collocation," said Adrian Black, manager of network operations in the department of information systems and technology at HOB. "That is such a remote location, and we own the buildings."

The Quincy facility already houses a T1 line, and a 100Mbit/sec. Internet connection is about to be installed there, Black said.

HOB, which operates the House of Blues clubs plus other performance venues, is concerned that an earthquake could cause significant damage to its headquarters in an 18-story building, Black said. He noted that the facility houses HOB's central IT operations and that the company's key financial, accounting, legal and marketing applications are all run on systems at the site.

Earthquake fears, along with a move by IT manager Sean Anderson to work remotely in Washington state, triggered Irvine, Calif.-based Comarco Inc. to build a disaster recovery center in Spokane late last year.

The decision came about two years after Anderson moved there when his Southern California home was destroyed by wildfires. "Since I'm up here and electricity is cheap in Spokane and rental space is cheap, it made sense," Anderson said.

> **Most of the stuff I worry about in terms of real-time recovery are small kinds of disasters.**
>
> **STEVEN PERRY,** IT DIRECTOR, COSTELLO & SONS INSURANCE BROKERS INC.

Once it's completed, the Comarco disaster recovery system will replicate its mission-critical software, which includes MK Enterprise ERP software from SSA Global Technologies Inc., data stored on its SQL Server database, engineering source code and Exchange e-mail data.

Comarco, a provider of wireless products and services, in November installed a disaster recovery system from Double-Take Software and is gradually replicating more and more data.

San Rafael, Calif.-based Costello & Sons Insurance Brokers Inc., which provides liability insurance for technology firms, has a four-part disaster recovery method that should provide adequate security to the company's data in the event of a minor disaster, but not necessarily a major one, said IT director Steven Perry.

First, the company has redundant servers in its headquarters offices, and second, all the data is backed up to tape at an off-site location in a bank vault across San Francisco Bay, Perry said.

The third part of the security plan requires all workers to use removable external hard drives, while the final disaster recovery system is what Perry called a "doomsday book" — a laptop with a 100GB drive and enough batteries to run the business for about a day. The laptop is taken off-site each day.

Perry acknowledged that the strategy may not keep the company running through major disasters. "Most of the stuff I worry about in terms of real-time recovery are small kinds of disasters," he said, adding that during "big-time disasters, I tend to think we would be offline for more than the amount of time that having instantaneous recovery requires." ▸

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement #40063800. **CANADIAN POSTMASTER:** Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly, except a single combined issue for the last two weeks in December by Computerworld, Inc., 1 Speen Street, Box 9171, Framingham, Mass. 01701-9171. Copyright 2006 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Renee Smith, Computerworld Reprints, c/o Reprint Management Services, Greenfield Corporate Center, 1808 Colonial Village Lane, Lancaster, Pa., 17601, (717) 399-1900, Ext. 150. Fax: (717) 399-8900. Web site: www.reprintbuyer.com. E-mail: computerworld@reprintbuyer.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $5 per copy; U.S. – $99.99 per year; Canada – $130 per year; Central & So. America: $250 per year; Europe – $295 per year; all other countries – $295 per year. Subscriptions call toll-free (888) 559-7327. **POSTMASTER:** Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

FRANK HAYES ▪ FRANKLY SPEAKING

Return to Normal

THINGS should start getting back to normal this week at New Hampshire's Office of Information Technology. There was, it seems, no hacker attack on a state server after all. The Cain & Abel tool wasn't used to grab credit and debit card numbers. It turns out the whole thing was probably just a misunderstanding (see story, page 16).

That could have been avoided — should have been, in fact. But once it looked like there was a security breach, the OIT did the right thing by going public with the news.

Now it's time to do something else right: Document everything.

Yes, that does sound pretty dull. But it would have avoided lots of the wrong kind of excitement. For those who haven't followed the story, on Feb. 15, the OIT announced that the Cain & Abel password-recovery tool had been discovered on a server during a security sweep. Cain & Abel has been used by attackers in the past, and OIT officials feared the worst. They notified the public, warned potential victims, called in the FBI and launched an investigation.

They also reportedly placed OIT employee Douglas A. Oliver on leave. He later told *Computerworld* that he'd installed Cain & Abel as part of a security test. Oliver said last week that he has been cleared to return to work April 25.

According to Oliver, in early February, OIT security testers using Cain & Abel and other tools discovered a slew of problems on state servers: DNS cache poisoning, unencrypted administrative password files, still-active accounts for ex-employees and a SQL Slammer worm infestation.

On Feb. 10, OIT workers began to patch all the state's SQL Server installations to block SQL Slammer. On Feb. 15, the state announced the Cain & Abel "breach," and Oliver was put on paid leave two days later.

Why was Oliver fingered? Probably because he installed Cain & Abel under his security credentials, just as he was supposed to. But why did the OIT identify Cain & Abel as the big problem rather than SQL Slammer, which posed a more direct threat?

It's hard to say for sure, because OIT officials aren't talking. It might have been, say, a clever ruse to mislead potential attackers. More likely, executive-level types were just confused over what kind of malware was involved, who might have put it on the state's systems, and how and where the real risks were.

No matter. Confused or not, those officials didn't try to cover up the problem. They took quick action and risked embarrassment by going public. Good for them.

But now that the security mess appears to be cleaned up, there's something they should do to prevent future, um, excitement.

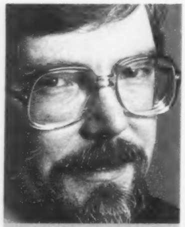
They should make sure that everything on production servers is documented. That all changes are logged. And that those logs are kept secure, so they'll actually be useful next time there's something to investigate.

Full documentation of what went on the servers, and when, would have cleared Oliver by confirming when and why he installed Cain & Abel. Inventories would have allowed OIT staffers to identify anything else on the servers that *wasn't* an authorized installation. Checksums would have helped spot modules that were infected by malware or replaced by intruders.

And full documentation doesn't just help against old-style threats like SQL Slammer. Rootkits, the hot new problem, are designed to be hard to spot. Knowing what an uninfected system is supposed to look like, down to the details, gives IT people a fighting chance at catching and dealing with a rootkit.

Sure, keeping tight control over what's on servers will be more work. But the OIT already knows that procedures have to be tightened up — remember those unencrypted passwords and ex-employee accounts? With today's security threats, such safeguards are no longer optional.

Think of them as IT's version of Sarbanes-Oxley, only a lot more useful than the real Sarb-Ox. Those controls are the price the OIT — and all IT people — will have to pay if we really want to ever get things back to normal again. ▸



FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

Easier Said Than Done

On this city government's old mainframe, printing out monthly financial statements requires running multiple programs and swapping out more than a dozen reels of tape. "Of course, the end users are totally oblivious to the behind-the-scenes mechanics," says a pilot fish there. "One day, the IT boss is filling in for the computer operator, who's on vacation. The city comptroller walks into the computer room and says, 'OK, Fred, push the button and let 'er run.' "

SHARK TANK

Too Much

This database administrator – "he describes himself as 'not just a DBA,' " reports a pilot fish in the know – wants to remove an error code on an Oracle system because he's sure the system is wrong and he's right. "He described the problem to his assistant DBA, who didn't argue with him," says fish. "Then he asked his supervisor for permission to remove the error code. He told his boss that the system was erroring when a number was divided by zero – 'and everyone knows that five divided by zero is one.' "

Too Subtle

IT guy sends an e-mail to the whole company. Subject: Phishing examples. "He described two classic examples of convincing phishing attacks," says a pilot fish who got the message. "He attached the two original e-mails, and also included the directive, 'Notice where the links take you.' Less than an hour later came the follow-up e-mail: 'DON'T CLICK THE LINKS.' I guess his original description of the evil e-mails was a little too subtle for some users."

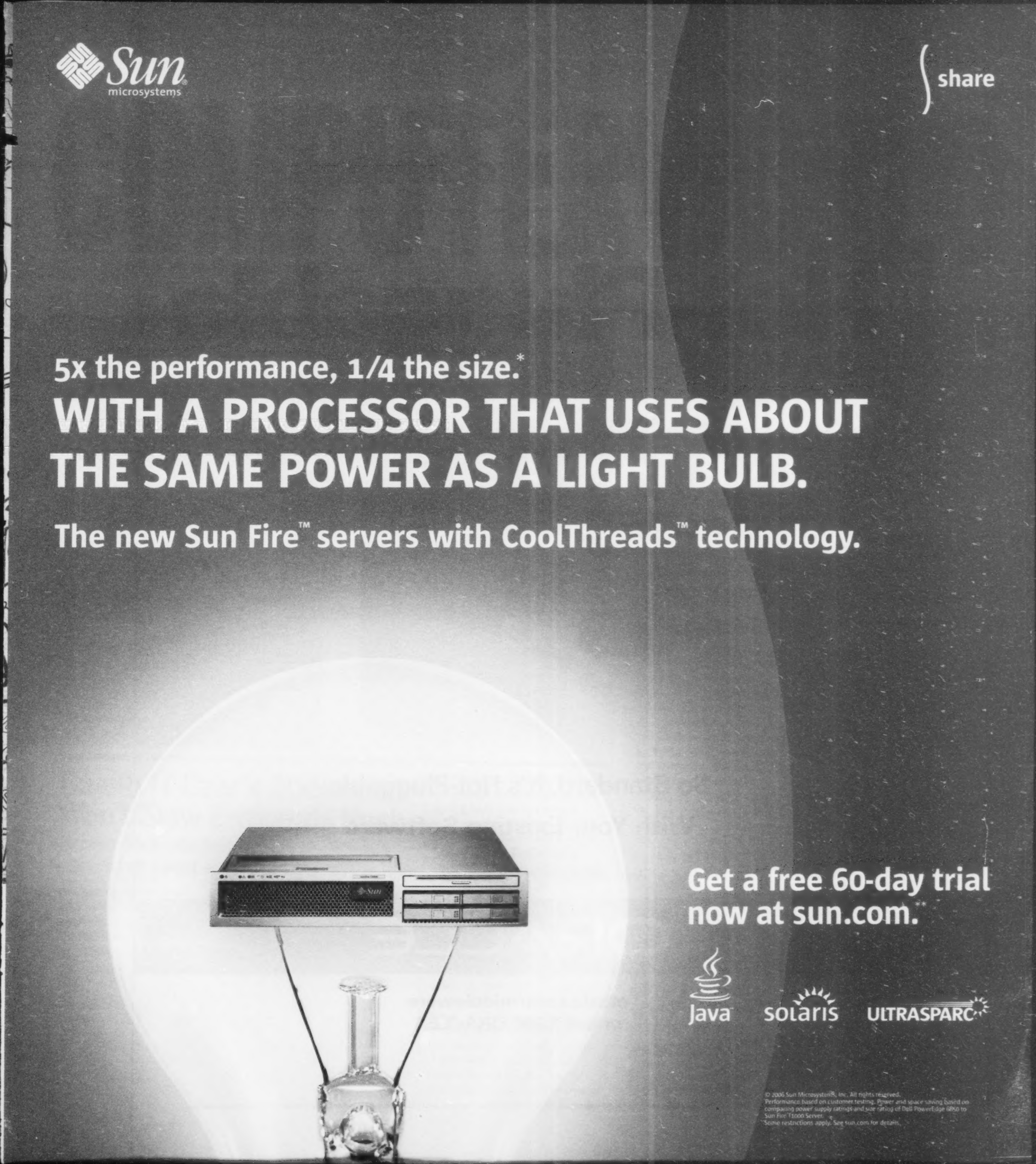
Too Hasty

User calls help desk pilot fish about a problem with his BlackBerry device. "I told him I need the make, model and serial number," says fish. User: I don't know where I can find that. Fish: Just pull out the battery and it should be right underneath there. The line goes dead, and fish realizes what's wrong. "He was talking on the BlackBerry," groans fish. "He called back and said, 'I think I disconnected myself with that BlackBerry issue.' I guess this is why we all have jobs."

Too Thorough

Support pilot fish gets a trouble ticket for a hard-drive failure, so he calls the user. Fish: "Why do you think your hard drive is bad?" User: Because I can see the scratches on the platters. Says fish, "After a quick trip to the user's office, I quickly confirmed his drive was dead – now. He sat proudly at his desk holding the stack of platters from the hard drive he'd disassembled."

ASSEMBLE YOUR TRUE TALE OF IT LIFE and send it to me at **sharky@computerworld.com.** You'll score a sharp Shark shirt if I use it. And check out Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky.**



Sun microsystems

share

5x the performance, 1/4 the size.*

WITH A PROCESSOR THAT USES ABOUT THE SAME POWER AS A LIGHT BULB.

The new Sun Fire™ servers with CoolThreads™ technology.

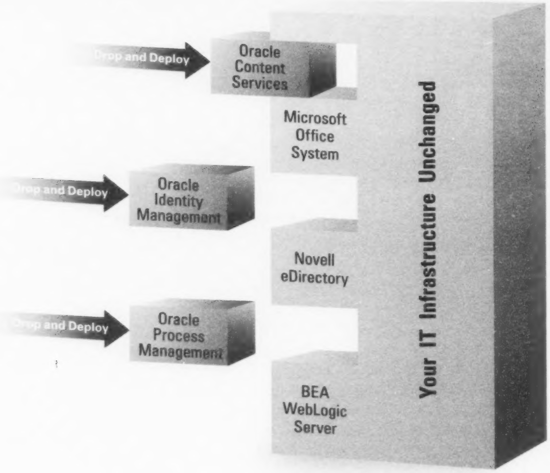
Get a free 60-day trial now at sun.com.**

Java Solaris ULTRASPARC

© 2006 Sun Microsystems, Inc. All rights reserved.
*Performance based on customer testing. Power and space saving based on comparing power supply ratings and size rating of Dell PowerEdge 6850 to Sun Fire T1000 Server.
**Some restrictions apply. See sun.com for details.

Oracle Fusion Middleware

Hot-Pluggable


Drop and Deploy
Oracle Content Services
Microsoft Office System
Drop and Deploy
Oracle Identity Management
Novell eDirectory
Drop and Deploy
Oracle Process Management
BEA WebLogic Server
Your IT Infrastructure Unchanged

So Standard, It's Hot-Pluggable
With Your Existing Software

J2EE — Enterprise Portal — Identity Management — Integration — Data Hub — Business Intelligence

ORACLE®

oracle.com/middleware
or call 1.800.ORACLE.1

Copyright © 2005, Oracle. All rights reserved. Oracle, JD Edwards and PeopleSoft are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.